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A

DESCRIPTIVE CATALOGUE

OF THE SPECIMENS IN THE

Industrial & Technological Museum,

MELBOURNE,

ILLUSTRATING THE

ECONOMIC WOODS OF VICTORIA.

Melbourne:
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NOTE.

In this Catalogue the better known local names of the principal kinds of timber trees are given, as well as the scientific names. The conflicting statements as to the value of some of the timbers are explained by the differences caused by the climate and character of the soil of the locality from which the specimens were taken, and the time of the year when the tree was felled. Many more determinations of the yield of charcoal, potash, pyroligneous acid, etc., and of the weight of a cubic foot of each variety of wood must be made, before a reliable average can be taken.

The following is a list of the more generally used popular names. The repetition of the same number indicates the recurrence of different popular names under the same species. A plurality of numbers opposite a name denotes its recurrence as applied to different species.*

	No.
Beech, Native or Evergreen	108
Blackwood	15
Bloodwood	80
Blueberry Ash	70
Boobyalla	13
Bottle-tree	43
Box, Prickly	44
Caper-tree, Native	45
Currijong	163
Cyprus or Sandarac Pine, Mountain	49
,, Desert	51
Dogwood	175
Fig, Native	114
,, Prickly	70
Flintwood	98
Grass-tree	181

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*For example, Blackwood or Lightwood both appear under No. 15, which represents *Acacia melanoxylon*. Blue Gum is a name applied to at least four species of Eucalyptus, under Nos. 79, 83, 84, and 105.

No.

- Gum-tree or Eucalypt—
  - Apple-tree ... 104
  - Blackbutt ... 98
  - Blue ... 79, 83, 84, 105
  - Bloodwood ... 80
  - Box ... 87, 93, 103
    - Bastard ... 84, 89
    - Grey ... 87, 100
    - Red ... 100
    - Yellow ... 89, 93
    - White ... 87
  - Cider ... 86
  - Drooping ... 107
  - Flintwood ... 98
  - Flooded ... 101, 105
  - Giant ... 77
  - Green ... 103
  - Grey ... 105
  - Ironbark ... 90, 102
    - White ... 82
    - Red Flowering ... 90
    - Black ... 90
  - Mallee ... 81, 96, 106
  - Manna ... 107
  - Messmate ... 94
  - Mountain Ash ... 77, 102
  - Peppermint ... 77, 95
  - Poplar-leaved ... 100
  - Red ... 101, 105
  - Spotted ... 84
  - Stringybark ... 79A, 81A, 92, 94, 99
  - White ... 93, 103, 107
    - Mountain ... 97
  - Woollybutt ... 91
- Heartwood ... 152
- Hickory, Native ... 11, 28
- Honeysuckle-tree, Common ... 38
  - ,, Coast ... 39
  - ,, Heath ... 40
- Lightwood ... 15
- Mangrove, Native ... 37
- Mint-tree ... 169
- Mulberry, Native ... 125
- Musk-tree ... 34
- Myall ... 8
- Myrtle-tree ... 108, 113
- Olive, Spurious ... 152
- Palm, Fan ... 137
- Peach, Native... 173
- Pepper-tree ... 69
- Pine, Oyster Bay ... 49
  - ,, Sandarac ... 51
- Pomegranate, Wild ... 45
- Quandong ... 173
- Radish-tree ... 61
- Sandalwood, Native ... 174
- Sassafras, Victorian ... 36

	No.
She-oak, Desert	56
,, Drooping	57
,, Shrubby	55
,, Straight	58
Spearwood	7
Spurious Apple	33
Stonewood	48
Sugar-tree	149
Tea-tree, Coast	133
,, Swamp	142
Tree Fern	67
,, Common Mountain	32
,, Common Gully	67
Umbrella Tree	17
Waratah, Victorian	177
Water-tree	123
Wattle, Black	4
,, Broom	2
,, Common	4
,, Feathery	4
,, Golden	20
,, Green	4
,, Prickly	10, 30
,, Silver	5
,, Willow	2
Whitewood	159
Yellow wood	31

The scientific names adopted will, with few exceptions, be found enumerated in Bentham and Mueller's *Flora Australiensis*, from which work also the few synonyms used have for the most part been selected.

For convenience of reference the species have been arranged in alphabetical order.

In the genus Eucalyptus, the position of each species in the Cortical System of Baron von Mueller is in most cases indicated. The following is the arrangement of the groups in that system :—

(1). LEIOPHLOIÆ. Bark smooth, outer layers shedding entirely.
(2). HEMIPHLOIÆ. Bark in the lower part of the trunk persistent, wrinkled or full of clefts, in the upper part and in the branches smooth, by the shedding of the outer layer.
(3). RHYTIPHLOIÆ. Bark everywhere persistent, wrinkled, solid within.
(4). PACHYPHLOIÆ. Bark everywhere persistent, wrinkled, fibrous within.
(5). SCHIZOPHLOIÆ. Bark everywhere persistent, deeply furrowed, solid within.

The original Catalogue was carefully revised by Baron von Mueller, and, in compiling the present edition, advantage has been taken of the information contained in *The Useful Native Plants of Australia* by J. H. Maiden.

As new editions will be issued from time to time, it is hoped that any person in possession of information relating to the Trees of Victoria will forward the same to the Museum, with, if possible, specimens of the timber.

Those engaged in collecting woods are recommended to secure with their specimens (branchlets with leaves, buds, flowers and fruits), portions exhibiting the common prevailing characters of the bark of the trunk and branches. Indeed such materials are essential, particularly for the examination of any member of the genus Eucalyptus and reference to the foregoing groups.

Articles made from various timbers may be seen in the Museum.

The Jurors' Reports mentioned in the text are from the Official Records of the Intercolonial Exhibitions held in Melbourne on the dates mentioned.

The following species have not been included in the Catalogue. They are mostly of a shrubby nature, and little seems known concerning their utility:—

Acacia aneura
„ hakeoides
„ montana
„ Oxycedrus
„ rupicola
Baeckea Behrii
Banksia ornata
Beyeria opaca
Callistemon coccineus
Calycothrix tetragona
Cassia eremophila
„ Sturtii
Cassinia arcuata
Correa speciosa var. virens
Daviesia latifolia
„ pectinata
Dodonæa lobulata
Eucalyptus alpina
Exocarpus aphylla
Grevillea Huegelii
„ ilicifolia
„ Victoriae
Hakea rostrata
Leptospermum attenuatum
„ scoparium
„ myrsinoides
Melaleuca uncinata
„ Wilsoni
Phyllanthus Gunnii
Pomaderris prunifolia
Solanum vescum
Templetonia egena

J. COSMO NEWBERY,
Superintendent.

CATALOGUE

OF

SPECIMENS OF WOODS

FROM THE

TREES & SHRUBS OF VICTORIA,

ADAPTED FOR ECONOMIC PURPOSES.

ACACIA.

(Natural Order—Leguminosæ. Sub. Order—Mimoseæ.)

THE genus Acacia is in Australia more numerous in species than any of Phanerogamous (or flowering) plants. It includes the so-called Wattle-trees, a name more commonly applied to those species celebrated for the astringency of their bark, and for their gum.

Among the woods yielded by this genus are the beautiful and valuable Blackwood (specifically identical with Lightwood) (No. 15), the Victorian violet-scented Myall (No. 8), two species of so-called Native Hickory (Nos. 11, 28), and a few other timbers (notably Nos. 7, 9, 10, 13, 14, 23, 27, 30) adapted for cabinetwork, implements, and small turnery purposes, etc. Time may develop peculiar values possessed by many of our small species; some kinds, once classified as useless on account of their diminutive size, are now applied in our manufactures.

1. **Acacia brachybotyra,** *Bentham.*

Not uncommon in the Mallee country. A tall handsome shrub.

2. **Acacia calamifolia,** *Sweet.*

WILLOW OR BROOM WATTLE.

Not infrequent in the Mallee country. A tall shrub. Yields an excellent tan bark.

3. **Acacia Dallachiana,** *F. v. Mueller.*

In the Buffalo Ranges. A tree 20 to 30 feet high.

4. **Acacia decurrens,** *Willdenow.*

COMMON WATTLE.

This, including its variety *A. mollissima*, is known also under the names of Black Wattle and Feathery Wattle, but must not be confounded practically with the Silver Wattle noted next in order, though but doubtfully a distinct species.

Frequent throughout the colony, except the desert tract; particularly frequent on ridges; forming often underwood in Eucalyptus forests. A small or middle-sized tree.

Wood light and tough, extensively used by coopers for staves. Specific gravity, 0·727 and 0·773; weight, 45-48 lbs. per cubic foot of dry wood; it yielded of charcoal 26·125 per cent.; of crude wood vinegar, 44·750 per cent., and of tar 7·125 per cent. Wattle bark is obtainable in vast abundance, and is much used by the tanner. The trees are stripped in September and the two or three months following, and the bark, being allowed to dry, is then in a marketable condition. Wattle gum is rather copiously available during the summer season. This tree, which grows on the uplands, affords a larger percentage of tannin than the Silver Wattle, whose habitat is on the banks of creeks and rivers. (Baron F. von Mueller, Osborne, Hoffmann.)

5. **Acacia dealbata,** *Link.*

SILVER WATTLE.

Common on river banks and in valleys, flowering earlier than *A. decurrens var. mollissima*, and requiring much less time for maturing its pods.

The timber and other products of the tree are very similar to those of the last-named species, though the percentage of tannin is considerably lower in the bark, which, moreover, is of less thickness.

On the banks of forest streams this tree attains a height of about 150 feet.

6. **Acacia discolor,** *Willdenow.*

Occurs on heath grounds on the lowlands, as well as on the mountains of Gippsland. A small tree only.

7. **Acacia doratoxylon,** *Cunningham.*

SPEARWOOD.

A small tree, restricted to the north-east part of the colony. Its hard and durable wood may be employed for cabinetwork, and is used by the aborigines for the manufacture of their spears and other weapons. It is also scented, and therefore may rank amongst perfumes. The leaves are eaten by stock.

8. **Acacia homalophylla,** *Cunningham.*

MYALL.

Is found in the Mallee scrub. A small tree, being in Victoria the only species yielding the violet-scented Myallwood. It possesses a dark and beautiful duramen. From its generally small size the use of its timber is mostly confined to the manufacture of tobacco pipes, whip handles, and small articles in turnery. This species yields a gum which is more or less copiously available during the summer season.

9. **Acacia implexa,** *Bentham.*

Scattered over ridges of the lower silurian formation, from Port Phillip to the Pyrenees and Upper Murray, but nowhere common. A middle-sized tree; wood useful for cabinetwork, turnery, and cogs. It is hard and close-grained. Colour, dark brown with yellow stripes. Specific gravity, 0·711; weight, 44 lbs. per cubic foot of dry wood. Bark available for tanning.

10. **Acacia juniperina,** *Willdenow.*

COMMON PRICKLY WATTLE.

In the granite formation of Gippsland; also in the Grampians and a few other places. The wood is light and tough, and much esteemed by splitters.

11. **Acacia leprosa,** *Sieber.*

NATIVE HICKORY.

Dandenong Ranges, and elsewhere in moist forest-valleys through the southern and eastern parts of the colony. Usually a rather small tree with a slender stem, yielding excellent wood for small cabinetwork and turnery.

12. **Acacia linearis,** *Sims.*

Frequent in moist forest valleys through the southern and eastern parts of the colony. Usually a rather small tree; wood available for minor furniture, implements, etc.

13. **Acacia longifolia,** *Willdenow.*

On the coast it is known by the native name "Boobyalla."

Chiefly in the eastern and southern parts of the colony. A large shrub, or frequently a small tree, yielding excellent wood for small cabinetwork and various tools, etc. The variety *A. sophoral* is particularly well adapted for binding coast-sands.

14. **Acacia lunata,** *Sieber.*

North-eastern part of the colony. A small tree only.

15. **Acacia melanoxylon,** *R. Brown.*

BLACKWOOD. LIGHTWOOD.

Rather frequent on many rich river flats, thence extending often up the valleys and on to flats. A middle-sized to a large tree yielding magnificent wood for every kind of cabinetwork, as it has a beautifully-marked and richly-coloured grain which takes a polish freely, and gives an effect hardly to be surpassed even by walnut. It is very close-grained and heavy, and is useful for all purposes where strength and flexibility are required. It is largely used by coach-builders, for cooperage, in the construction of railway carriages and trucks, and in the better class of agricultural implements. It is also used for gun-stocks and a variety of turnery work, and is the best for bending under steam. Specific gravity, from 0·664 to 0·777; weight of a cubic foot of dried wood, 41-48 lbs. The yield of charcoal from the wood, 29·250 per cent.; crude wood vinegar, 40·250 per cent.; and of tar, 7·062 per cent. (F. M., Osborne, Hoffmann.)

This species yields tanners' bark which is inferior, however, to that from *Acacia decurrens.*

16. **Acacia myrtifolia,** *Willdenow.*

Widely distributed over the colony in mountain and forest regions, rocky hills, etc. A tall shrub.

17. **Acacia Osswaldi,** *F. v. Mueller.*

In the Mallee scrub, not uncommon, but always remaining a small tree. The plant is exquisitely adapted for tall hedges. It is often called the "umbrella tree," as it gives a capital shade. The heart-wood is dark, hard, heavy, and close-grained. It would be useful for cabinetwork, turnery, etc.

18. **Acacia penninervis,** *Sieber.*

Scattered through the eastern half of the colony, over ridges and ranges; gregarious on some of the sub-alpine declivities and plateaux. A usually small tree. (F. Mueller.) The bark yielded of tannic acid 17·9 per cent., and of gallic acid 3·8 per cent. The bark of this species was chosen by Baron von Mueller to demonstrate the fact that many of the species of this great genus are calculated to afford, in their bark, a large supply of material adapted for packing papers. (*Official Record*, *Exhibition*, 1866, page 246.)

19. **Acacia pravissima,** *F. v. Mueller.*

Upper Gippsland and Buffalo Ranges. A tall shrub or small tree.

20. **Acacia pycnantha,** *Bentham.*

GOLDEN WATTLE.

Frequent throughout the greater part of the colony, in open forest country or scrub, as well as on the sea-coast. This is one of the species yielding superior tanners' bark and wattle gum. The specific gravity of the wood has been given by Mr. Osborne as 0·830; weight of a cubic foot of dried wood about 51½ lbs.

21. **Acacia retinodes,** *Schlechtendal.*

On grassy ridges and open valleys throughout the greater part of the colony. A moderate-sized, ever-flowering tree; yields good tan bark; also gum. The wood is prettily grained, tough, and durable.

22. **Acacia rigens,** *A. Cunningham.*

Desert country along the Murray and Wimmera. A tall shrub or small tree. Wood hard and tough, and possessed of a very agreeable perfume.

23. **Acacia salicina,** *Lindley.*

Common in the north-west desert. A small or occasionally middle-sized tree. Wood hard, heavy, durable, and of a fine dark shade; highly adapted for ornamental furniture. Specific gravity, 0·763; weight of cubic foot of dried wood about 47½ lbs. (*Jurors' Report,* 1862.) Diameter of tree, 12 to 18 inches; height, 30 to 50 feet.

24. **Acacia sclerophylla,** *Lindley.*

In the Murray Desert. A shrub only.

25. **Acacia sentis,** *F. v. Mueller.*

Murray Desert. A bush or small tree; well adapted for hedges. In New South Wales the presence of this tree is always considered a sure indication of underground water.

26. **Acacia stenophylla,** *A. Cunningham.*

Restricted within Victoria to the banks of the Murray River and the lower Wimmera and Avoca. A middle-sized tree. Wood very hard. Planes excellently, giving a very smooth surface.

27. **Acacia stricta,** *Willdenow.*

Southern and eastern tracts of the colony. Wood, on account of its small size, only suitable for minor articles such as turners' work.

28. **Acacia subporosa,** *F. v. Mueller.*

NATIVE HICKORY.

Restricted to the east part of Gippsland. This is considered a valuable wood for many purposes. It is exceedingly tough and elastic; would make good gig-shafts, handles for tools, gun-stocks, etc. Tall straight spars, fit for masts, can be obtained of considerable length and 18 inches diameter. (L. Morton.) The bark yielded of tannic acid 6·6 per cent., and of gallic acid 1·2 per cent.

29. **Acacia verniciflua,** *A. Cunningham.*

A shrub or small tree widely distributed over the colony in mountain and forest regions.

30. **Acacia verticillata,** *Willdenow.*

THE COMMON PRICKLY WATTLE.

Occurring almost everywhere in moist valleys. More of a shrub than a tree. Wood useful for small turnery work.

31. **Acronychia lævis,** *Forster.*

YELLOW WOOD. *Natural Order—Rutaceæ.*

Ranges scantily from Lake King to Cape Howe. A beautiful tree, attaining a height of 60 feet; diameter of stem occasionally 1½ to 2 feet. Timber of superior quality, pale, close-grained.

32. **Alosphila Australis,** *R. Brown.*

MOUNTAIN TREE FERN. *Natural Order—Filices.*

On slopes of moist ranges; abundant in most of the southern forest districts. Attaining 40 feet in height and upwards. Occasionally used for turnery for the sake of its peculiar markings. Laboratory researches under the directorship of Baron von Mueller, yielded from the stem; charcoal 29 per cent.; crude wood vinegar, 44 per cent.; tar, 6 per cent.; tannic acid, 2·9 per cent.; and gallic acid, 0·9 per cent.

33. **Angophora intermedia,** *De Candolle.*

SPURIOUS APPLE-TREE. *Natural Order—Myrtaceæ.*

Restricted to the eastern part of Gippsland. A shady, middle-sized, rarely a large tree. Timber very valuable in quality; when free from gum-veins it is much used for naves of wheels, and cut into boards for various purposes. (Moore.)

34. **Aster argophyllus,** *Labillardière.*

THE MUSK-TREE. *Natural Order—Compositæ.*

Confined to moist umbrageous forest gullies, but there abundant.

Seldom exceeds 60 feet in height, and is generally smaller. The wood has a pleasant fragrance, is of a beautiful mottled colour, and well adapted for turnery, veneering, fancy articles of furniture, pianofortes, etc. *(Jurors' Report,* 1866.) Specific gravity is stated at 0·642; weight of a cubic foot of dried wood about 40 lbs. A brilliant sap-green has been prepared from this species by Mr. Bosisto.

35. **Aster glandulosus,** *Labillardière.*

Widely distributed through the colony; never of large size, often shrubby.

36. **Atherosperma moschatum,** *Labillardière.*

VICTORIAN SASSAFRAS-TREE. *Natural Order—Monimiaceæ.*

In deep, wet forest ravines. A middle-sized tree, affording a timber which is useful to the cabinetmaker. It has a dark duramen, frequently exhibits a pleasant figure, and has also the quality of taking a beautiful polish. The bark of this tree, as also an essential oil therefrom, both of which are shown in the Museum, are articles of commerce. One hundred lbs. of bark chips yielded 18 ozs. 6 drs. of oil. (Bosisto). It contains an alkaloid which has been named Atherospermine, possessing valuable therapeutic properties. (For further details see *Official Exhibition Record,* 1862, page 51, and *Philadelphia Centennial Exhibition Record of* 1875, page 82-83.)

37. **Avicennia officinalis,** *Linné.*

NATIVE MANGROVE. *Natural Order—Verbenaceæ.*

Extending along the sea-coast in saltwater estuaries. A low, branching tree, yielding a timber valued for stonemason's mallets (Moore) and some other utensils.

38. **Banksia marginata,** *Cavanilles.*

(B. Australis, R. Br.)

THE COMMON HONEYSUCKLE-TREE. *Natural Order—Proteaceæ.*

In less fertile localities all over the colonial territory, ascending to sub-alpine elevations. A small tree, yielding a light timber of a beautiful grain, which is used for stems and short knees of boats, and generally for cabinet furniture and various ornamental purposes. *(Jurors' Report*, 1866.) Specific gravity, 0·610; yielded of charcoal, 29·500 per cent.; of crude wood vinegar, 40·062 per cent.; and of tar, 6·562 per cent. A ton of dry wood yielded, as a maximum, 14¼ lbs. of pearlash, or 6½ lbs. of pure potash. A cubic foot of dried wood weighs about 38 lbs. (F. v. Mueller, Osborne.) Bark available for tanning, and the well-seasoned wood for veneers.

39. **Banksia integrifolia,** *Linné Filius.*

THE COAST HONEYSUCKLE-TREE.

To be found only on the coast eastward from Port Phillip. A middle-sized tree. Timber possessing qualities similar to those of *Banksia marginata*, but dimensions much larger. *(Jurors' Report*, 1866.) Specific gravity of wood, 0·799; weight of a cubic foot of dry wood about 50 lbs. Beautiful veneers have been cut from this timber.

40. **Banksia serrata,** *Linné Filius.*

THE HEATH HONEYSUCKLE-TREE.

On the sandy heaths of Gippsland, rather frequent. A small or occasionally middle-sized tree, having always a remarkably crooked stem; wood possessing qualities similar to those of *B. marginata. (Jurors' Report*, 1866.) The timber is soft and short in the grain; it is high-coloured and singularly marked. (Lockhart Morton.) Specific gravity, 0·803; weight of cubic foot of dried wood, about 50 lbs. The bark of this species yielded of tannic acid 10·8 per cent., and of gallic acid 0·7 per cent. Also suitable for veneer cutting.

41. **Bertya Findlayi,** *F. v. Mueller.*

Natural Order—Euphorbiaceæ.

Only in the most north-eastern parts of Victoria. A small tree.

42. **Boronia arborescens,** *F. v. Mueller.*

(Zieria Smithii, Andr.; Z. lanceolata, R. Br.) Natural Order—Rutaceæ.

From the Grampians and Cape Otway Ranges eastward, along humid forest valleys, ascending to high mountain regions. A shrub or small-sized tree. Timber used for wood-engraving in New South Wales. (Moore.) One hundred pounds of fresh leaves yielded 6½ ozs. essential oil, strongly resembling in taste and odour that of rue *(Ruta graveolens)*, to which order botanically the plant belongs. Baron von Mueller, in *Official Record of the Exhibition of* 1861, mentioned that this plant might be used medicinally as a substitute for the South African *bucco.*

43. **Brachychiton populneum,** *R. Brown.*

THE BOTTLE TREE ; one of the Currijongs. *(Sterculia diversifolia, G.D.) Natural Order—Sterculiaceæ.*

Sparingly in the more open valleys of the Murray, Mitta Mitta, the Snowy Rivers, and thence to the eastern limits of Gippsland. Stem often remarkably turgid ; wood exceedingly soft, white, and somewhat mucilaginous ; the fibre of the bark can be converted into cordage. Gum Tragacanth exudes from the stem. This tree is excellent for forming permanent shade-lines.

44. **Bursaria Spinosa,** *Cavanilles.*

PRICKLY BOX-TREE. *Natural Order — Pittosporeæ.*

Common in the lowlands as well as in the mountain districts. A tree of small size ; stem rarely exceeding a foot in diameter ; wood very hard and fine-grained, adapted for turnery, carpenters' rules, and many other implements. *(Jurors' Report,* 1866.*)*

45. **Busbeckia Mitchelli,** *F. v. Mueller.*

NATIVE CAPER TREE, or WILD POMEGRANATE *(Capparis Mitchelli, Lindl.) Natural Order —Capparideæ.*

Found in the Mallee scrub. A small tree. The wood is whitish, hard, close-grained, and suitable for engraving, carving and similar purposes. Strongly resembles lancewood.

46. **Callistemon brachyandrus,** *Lindley.*

Natural Order—Myrtaceæ.

Murray Desert. Never a large tree ; often shrubby.

47. **Callistemon lanceolatus**, *De Candolle.*

East Gippsland. Very ornamental. Wood hard and heavy; suitable for wheelwright's work.

48. **Callistemon salignus**, *De Candolle.*

STONEWOOD.

On banks of watercourses. A small tree, yielding a remarkably hard wood, which has been used for wood-engraving. *(Jurors' Report*, 1862.*)*

49. **Callitris cupressiformis**, *Ventenat.*

THE MOUNTAIN CYPRESS-PINE. *(Frenela rhomboidea, Endl.) Natural Order—Coniferæ.*

On rocky, densely-timbered ranges—thus on the Grampians and the Genoa Ranges; also on low sandy country near the Wimmera. A middle-sized tree, known also as the Oyster Bay Pine. (F. Mueller.) Wood used, like that of *Callitris verrucosa*, for a great variety of purposes. *(Jurors' Report*, 1866.*)*

50. **Callitris calcarata**, *R. Brown.*

(*Frenela pyramidalis, A. Cunn. Frenela Endlecheri, Parla.*)

Ovens Ranges. A small or middle-sized tree. Spreads rapidly over sterile, particularly sandy land. The timber is durable, fine-grained, fragrant, and capable of a high polish. It is used for piles, and for sheathing punts and boats; it is repugnant to termites; the knotty portions are useful for inlaying.

51. **Callitris verrucosa**, *R. Brown.*

THE DESERT SANDARAC-PINE, or CYPRESS. (*Frenela robusta, A Cunn.*)

Generally a middle-sized tree, more or less copiously dispersed through the Mallee scrub, in some directions abundant. The timber of this tree, from its peculiar odour, is said to be obnoxious to the attacks of insects. The dark beauty of the wood renders it useful for many articles of cabinet furniture, as well as for building and flooring. (*Jurors' Report*, 1866.) Valuable for cabinet purposes, and very durable for telegraph posts. (Moore.) Specific gravity, 0·691. Resin from this species and from *C. cupressiformis* is available in considerable abundance; it exudes naturally from the bark in tears, or small pendulous masses, and also flows from incisions made to encourage exudation. It is almost identical with the best Sandarac from the *Callitris quadrivalis* of North Africa, so largely used in the manufacture of varnishes. (*Jurors' Report*, 1861, page 57.) Weight of a cubic foot of dried wood, about 43 lbs.

52. **Carumbium populifolium,** *Reinwardt.*

(*Omalanthus populifolius, Grah.*) *Natural Order—Euphorbiaceæ.*

Occurring in the eastern extremity of Gippsland. A tall shrub or small tree.

53. **Cassinia aculeata,** *R. Brown.*

Natural Order—Compositæ.

Frequent in moist wooded tracts of the colony. Oftener a shrub than a small tree. The wood is white and hard.

54. **Cassinia lævis,** *R. Brown.*

Murray Desert. Wood light and soft.

55. **Casuarina distyla,** *Ventenat.*

THE SHRUBBY SHE-OAK. (*C. rigida, Miq.*)

Natural Order—Casuarinæ.

Widely dispersed through the colony. Suited for fixing drift-sand.

56. **Casuarina glauca,** *Sieber.*

THE DESERT SHE-OAK.

A middle-sized tree. For description of timber see the following more abundantly dispersed species. The timber of the various *Casuarinas* is in some parts of the colony known by the name of Beefwood. All *Casuarinas* may be pollarded for cattle fodder, and their timber used for cabinetwork and veneers when of large size.

57. **Casuarina quadrivalvis.** *Labillardière.*

THE DROOPING SHE-OAK.

Frequent in grassy plains, on hills, and along the sandy coast. A quick growing middle-sized tree, with branchlets usually if not always pendulous. Wood close and tough, but not durable. The She-oaks are well adapted on account of the singular beauty of their grain for various purposes in furniture manufacture. They are used in certain applications in boat-building. This wood is also excellent for turnery and for other ornamental work. She-oak is also frequently used as firewood for domestic purposes. It does not flame much, but burns down to an incandescent glowing mass which makes a peculiarly pleasant fire for the house. (*Jurors' Report*, 1866.) Timber of this and allied species used for shingles and staves. (Moore.) The specific gravity of this wood, 0·935 to 1·037. It yields charcoal 27 per cent., crude wood vinegar 43 per cent., and tar 7 per cent. The spongy foliage, formed by the cylindrical concrescence of the branchlets with the leaves, can be converted into an excellent pulp for packing, and even printing papers and millboard. (F. v. Mueller. *Official Record*, 1866, page 247.) Weight of a cubic foot of dried wood, from 58 to 64 lbs.

58. **Casuarina suberosa.** *Otto and Dietrich.*

THE STRAIGHT SHE-OAK.

On ridges of the lower as well as higher regions not rare. A moderate-sized tree. Timber and foliage possessing qualities similar to those of *C. quadrivalvis.* A ton of dry wood yields about 7¼ lbs. pearlash, or 4½ lbs. of pure potash. (*F. v. M.*)

59. **Casuarina torulosa.** *Aiton.*

East Gippsland. Timber used principally for shingles and sometimes for cabinetwork. (*Moore.*) Is one of the best woods for oven-fuel.

60. **Celastrus Australis,** *Harvey and Mueller.*

Natural Order—Celastrineæ.

Gippsland. Wood available only for small fancy work.

61. **Codonocarpus cotinifolius,** *F. v. Mueller.*

THE RADISH TREE.

Natural Order—Phytolacceæ.

In the Mallee scrub very sparingly; attaining a height of 30 feet. The Poplar of the Central Australian explorers. Whole tree strong-scented.

62. **Commersonia Fraseri,** *Gay.*

Natural Order—Sterculiaceæ.

East Gippsland. Small tree; bark fibrous.

63. **Coprosma hirtella,** *Labillardière.*

Natural Order—Rubiaceæ.

Frequent in moist forest regions. Shrubby only.

64. **Coprosma Billardieri,** *Hooker.*

In forest swamps and on periodically inundated river banks; not rare throughout the southern and eastern districts. A small-sized tree or a bush only.

65. **Correa Lawrenciana,** *Hooker.*

Natural Order—Rutaceæ.

In sub-alpine situations, along rivulets and torrents, to 4,000 feet elevation. A tall shrub or small tree.

66. **Cyathea Cunninghami,** *J. Hooker.*

Natural Order—Filices.

Cape Otway Ranges and Dandenong. A tall but rare fern-tree, with very slender stem.

67. **Dicksonia Billardieri,** *F. v. M.*

(D. antarctica, Labillardière; Cibotium Billardièri, Kaulfuss.)

GULLY TREE-FERN. *Natural Order—Filices.*

Frequent in the lower fern-tree gullies. Nowhere occurring in antarctic, but extending to sub-tropic regions. One of the aptest of tree-ferns for horticultural transmissions. The stems are sometimes used for cutting into rustic chairs.

68. **Dodonæa viscosa,** *Linné.*

Natural Order—Sapindaceæ.

In nearly all regions of the colony. A tall shrub. Wood exceedingly dense, close-grained, and durable; of a very flinty nature. Fit for sheaves of ships' blocks, rulers, tree-nails, turnery, inlaid works, etc.

69. **Drimys aromatica,** *F. v. Mueller.*

(Tasmannia aromatica, R. Br.)

NATIVE PEPPER-TREE. *Natural Order—Magnoliaceæ.*

Humid forest ranges from the Cape Otway Ranges and Gippsland to the Australian Alps, ascending to at least 5,000 feet. A bushy shrub or small tree.

70. **Elæocarpus holopetalus,** *F. v. Mueller.*

BLUEBERRY ASH OR PRICKLY FIG. *Natural Order—Tiliaceæ.*

Within Victoria. Found only in ravines or on river banks in East Gippsland. A noble tree, attaining a height of 120 feet. Wood pale, fine-grained; exquisite for cabinetwork.

71. **Elæocarpus cyaneus,** *Aiton.*

Forest gullies and wooded ranges, from Wilson's Promontory to the eastern frontiers of Gippsland. A small or middle-sized tree. Wood compared by artisans to ashwood *(Jurors' Report,* 1862), and recommended for wood engraving by Dr. G. Bennett.

72. **Eremophila alternifolia,** *R. Brown.*

Natural Order—Myoporinæ.

Murray Desert. A bush but rarely attaining tree dimensions.

73. **Eremophila bignoniflora,** *F. v. Mueller.*

Murray Desert. Wood very valuable for its fragrance, density, and beautiful tinge; elegantly marked with green and yellow. (Thozet.)

74. **Eremophila longifolia,** *F. v. Mueller.*

Peculiar to the northern and north-western desert. A small tree. Wood brittle.

75. **Eremophila oppositifolia,** *R. Brown.*

Murray Desert. A small tree, or shrubby only.

76. **Eriostemon squameus,** *Labillardière.*

Natural Order—Rutaceæ.

In the ranges towards Cape Otway, along brooks; maximum height, 50 feet; greatest stem-circumference, 7½ feet.

EUCALYPTS or GUM-TREES.

(Natural Order—Myrtaceæ.)

77. Eucalyptus amygdalina, *Labillardière.*

One of the Peppermint trees and Mountain Ash of the Dandenong Ranges. Giant Gum-tree.

In forest country of the southern and eastern parts of the colony, always interspersed with other trees. A tree attaining colossal size in deep ravines, and of middle size in more open places. This tree may be the tallest on the globe, perhaps only rivalled by the *Wellingtonia gigantea (Sequoia Wellingtonia)* of California. It has been measured repeatedly 420 feet, and towards the sources of the Yarra it is said to attain a still greater height. The wood is fissile, well adapted for shingles, rails, house-building, for the keelson and planking of ships, and other purposes. It is hard, close-grained timber. The inner bark is adapted for the preparation of all kinds of coarser paper. This species contains more oil in its foliage than any of its congeners; 1000 lbs. of fresh-gathered leaves, with their small branchlets, yield about 500 ozs. of oil by distillation. It is rubefacient, disinfectant, and employed externally in rheumatic and other affections. It is extensively used in various manufactures, chiefly for perfumery, soaps, etc. Kino from this species is largely available. (Mueller, Bosisto.) The gigantic state of the tree passes also as a Mountain Ash.

78. Eucalyptus Behriana, *F. v. Mueller.*

(*Sect. Rhytiphloiæ.*)

Found in the Mallee scrub, and also towards the Avoca. A tall shrub, or small tree.

79. Eucalyptus botryoides, *Smith.*

The BLUE-GUM of New South Wales, or BASTARD MAHOGANY of Gippsland. (*Sect. Rhytiphloiæ.*)

East Gippsland, delighting in river banks. A tall, handsome tree, remarkable for its dark-green foliage. The stems, which have a rough, furrowed, persistent bark, attain a height of 80 feet without a branch, and a diameter of 8 feet. The timber, usually sound to the centre, is adapted for waterwork, waggons, knees of boats, etc. No decay was observed in posts which were in use fourteen years. (F. v. M.) The Blue-gum of the coast district of New South Wales. It is considered to be one of the finest timbers for ship-building. (Moore.)

79A. **Eucalyptus capitellata,** *Smith.*

One of the Stringybarks. Affords a good, useful timber, principally used for fence-rails, shingles, and rough building purposes. Might be raised with advantage on wet, sandy land. Produces seed when quite young.

80. **Eucalyptus corymbosa,** *Smith.*

THE BLOOD-WOOD EUCALYPT. (*Sect. Rhytiphloiæ*).

In Victoria this species is confined to the eastern part of Gippsland. A small or middle-sized tree, but sometimes attaining a great height, with a persistent furrowed bark. Less known to artisans than its apparent quality would seem to merit. It exhibits a clear grain of a red colour, and is well adapted for many useful purposes in the mechanical arts. (*Jurors' Report*, 1866.) Timber subject to kino veins, but the sound timber durable, and principally used for posts and beams. (Moore.) The kino from this species is obtainable in rather large quantities. In experiments conducted at the Melbourne Phytochemical Laboratory, the bark yielded tannic acid 2·7 per cent., and gallic acid 0·8 per cent. It is also available for paper material.

81. **Eucalyptus dumosa,** *Cunningham.*

One of the principal bushes or small trees constituting the Mallee scrub on the Murray River and its tributaries. May be regarded as a variety of *E. incrassata.*

81A. **Eucalyptus eugenioides,** *Sieber.*

BASTARD STRINGYBARK.

This wood is pale-coloured, splits well into shingles, palings, rails, and slabs, and can also be sawn into flooring boards, but it forms a very inferior fuel. Said to be less fissile than other stringybark trees but more lasting. (Mueller.)

82. Eucalyptus fasciculosa, *F. v. Mueller.*

(*E. paniculata, Sm. var. fasciculosa, Benth., Fl. Aust.*)
(*Sect. Schizophloiæ.*)

In the Mallee scrub. In New South Wales, *E. paniculata*, of which this, according to Bentham, would appear to be a variety, is a moderate-sized tree, known as one of the white Ironbarks. (Woolls.) Timber strong and very durable. (Sir Wm. Macarthur, Moore.)

83. Eucalyptus globulus, *Labillardière.*

THE VICTORIAN AND TASMANIAN BLUE-GUM. (*Sect. Leiophloiæ.*)

Is confined to forest valleys except near the coast where it is common, especially in the forests of Cape Otway, Western Port, and Gippsland, from which last place it extends to Mount Buller and the Buffalo Ranges. It grows to colossal size, in deep declivities of ranges; supplies a hard light-coloured timber of great strength and tenacity as well as durability, extensively used for beams, joists, etc., in buildings, and for railway sleepers, piers, and bridges. It is also well adapted for ship-building. From the great length in which it can always be procured it is especially suitable for outside planking. It has been used for masts of vessels, but, owing to its great weight, it is not so suitable for this purpose as some other kinds of timber. It is also used for shafts. (*Jurors' Report*, 1866.) The specific gravity of the timber has been found 0·698 to 0·889. The kino of the tree is largely available. Paper made from the bark answers for packing, and perhaps for printing. Samples of wood spirit, acetic acid, tar, charcoal, etc., prepared at the Phytochemical Laboratory of the Botanical Gardens under the directorship of Baron von Mueller, are in this Museum. The essential oil and other extracts from and preparations of the foliage of Eucalyptus globulus are already of world-wide repute, mainly through Jas. Bosisto, Esq., J.P., M.L.A. Much valuable information in reference to these products will be found in the various official records of the Victorian and Intercolonial Exhibitions of 1861, 1866-7, 1872, and 1875. Mr. Bosisto contributes essential oil, Eucalyptol, Eucalyptic acid, liquor Eucalypti globuli. A ton of dry wood yields about 4½ lbs. pearlash or 2¾ lbs. of pure potash. Weight of a cubic foot of dried wood from 43½ to 45½ lbs.

Results of Experiments on the strength of Blue-gum Timber instituted by Mr. James Mitchell.

The pieces subjected to test were 7 feet long by 2 inches square.

	Deflection.						
	Weight and Deflection while the Elasticity remained perfect.		Deflection at the crisis of breaking.	Total weight required to break each piece.	Value of strength $S=\frac{l\,w}{4\,b\,d^2}$	Direct cohesion (tensile strength) per square inch	Specific gravity.
	Weight in	Deflection to					
	lbs.	inches.	inches.	lbs.		lbs.	
No. 4, seasoned 8 months	294	1·5	7·5	819	2149	...	1·076
No. 5, seasoned 8 months	503	1·375	5·	867	2276	...	1·034
No. 6, seasoned 2 to 3 years	472	1·375	6·5	1029	2701	28,784	1·054
No. 7, seasoned 4 to 5 years	413	1·375	6·	1043	2737	27,440	1·078
No. 8, seasoned 2 to 3 years	567	1·75	7·5	1113	2921	22,064	·987
No. 9, seasoned 4 to 5 years	434	1·375	6·	1113	2921	27,472	1·071
No. 10, seasoned 3 years	496	1·625	5·25	1122	2945	31,088	·942
No. 15, seasoned 20 years*	518	1·625	4·	1330	3491	28,336	1·089

* Part of an old door-post.

Results of Experiments instituted by MR. LASLETT *on the strength of Blue-gum Timber. The pieces subjected to trial were 7 feet long by 2 inches square. The weight was suspended in the middle, both ends free.*

EXPERIMENTS ON TRANSVERSE STRENGTH.

Number of the specimen.	DEFLECTIONS.			Total weight required to break each piece.	Specific gravity.
	With the apparatus weighing 390 lbs.	After the weight was removed.	At the crisis of breaking.		
	inches.	inches.	inches.	lbs.	
1	1·25	·15	4·50	767	1·079
2	1·75	·20	3·75	602	·997
3	1·35	·10	5·75	710	1·037
4	1·00	·00	3·75	767	1·108
5	1·25	·15	3·50	684	1·026
6	1·00	·00	4·00	741	·924
Average	1·26	·10	4·21	712	1·029

Each piece broke with a short fracture. S=1869.

EXPERIMENTS ON TENSILE STRENGTH.

Number of the specimen	Dimensions of each piece.	Specific gravity.	Weight each piece broke with.	Direct cohesion on 1 square inch.
	inches.		lbs.	lbs.
7		·997	14,560	3640
8	2 x 2 x 30	1·079	26,600	6650
9		1·037	24,360	6090
10		1·108	26,600	6650
11		1·026	28,840	7210
Average ...	... ...	1·049	24,192	6048

VERTICAL OR CRUSHING STRAIN ON CUBES OF 2 INCHES.

No. 12.	No. 13.	No. 14.	No. 15.	No. 16.	No. 17.	Average.	Average on 1 square in.
tons.	tons.	tons.	tons.	tons	tons.	tons.	tons.
12·875	13·000	12·750	11·125	10·500	13·625	12·312	3·078

The tensile strength as given by James Mitchell is greatly in excess of that recorded by Laslett, but is fairly in accord with some recent observations by Mr. F. C. Campbell, of Geelong. (See Proceedings of the Royal Society of Victoria, 1879.)

Results of Experiments on the transverse strength of wood of Eucalyptus globulus instituted by BARON VON MUELLER *and* J. G. LUEHMANN. *The pieces were 2 inches square, 2 feet long between the supports, the weight suspended in the middle, both ends free. The timber was seasoned for nine months.*

No.	DEFLECTION.			Total weight required to break each piece.	$S=\frac{l\,w}{4\,b\,d^2}$	Specific gravity.
	With the apparatus weighing 780 lbs.	After the weight was removed.	At the crisis of breaking.			
	inches.	inches.	inches.	lbs.		
1	·12	·04	·75	2444	1833	·938
2	·08	nil	·62	3224	2418	·992
3	·16	·04	·58	2256	1692	·913
4	·12	·04	·75	2661	1996	·942
5	·10	·02	·75	2740	2055	·946
6	·12	·03	·55	2288	1716	·927
7	·12	·02	·75	2409	1807	·924
8	·12	·04	·58	2280	1710	·845
9	·16	·04	·62	2252	1689	·852
10	·05	nil	·58	3752	2814	1·094
11	·08	nil	·65	3024	2268	1·096

$$\text{S (strength)}=\frac{\text{L (length) x W (weight)}}{\text{4 x b (breadth) x 2 d}^2\text{ (depth multiplied by itself).}}$$

Results of Experiments on the transverse strength of the wood of various Eucalypts, by Baron von Mueller *and* J. G. Luehmann. *Specimens 2 feet long, 2 inches square.*

	Deflection.		Total weight required to break each piece.	Value of strength. $S = \frac{l\,w}{4\,b\,d^2}$	Specific Gravity.	
	With the apparatus weighing 780 lbs.	At the crisis of breaking.			Air dried.	Absolutely dried.
	inches.	inches.	lbs.			
Eucalyptus leucoxylon — Victorian Ironbark-tree	·03	·63	4192	3144	1·028	·908
	·03	·60	3977	2983	1·061	·913
siderophloia—Sydney Ironbark-tree	·02	·63	3873	2905	1·075	·936
	·02	·56	3752	2814	1·129	·953
polyanthema—Red box ...	·10	·56	3215	2411	1·248	1·031
	·08	·58	3145	2359	1·214	1.010
melliodora—Yellow box ...	·06	·58	2903	2177	1·112	·947
	·08	·63	2781	2086	1·040	·876
rostrata—Pale red gum-tree ...	·08	·52	2781	2086	1·008	·843
	·07	·48	2712	2034	·940	·790
rostrata—Dark red gum-tree ...	·10	·65	2539	1904	1·045	·874
	·09	·68	2417	1813	·984	·809
macrorrhyncha — Stringybark-tree	·17	·62	2412	1809	·952	·809
	·17	·60	2384	1788	1·060	·901
Gunnii var.—Swamp gum-tree	·12	·75	2327	1745	·950	·802
	·14	·75	2268	1701	1·021	·842
Stuartiana—Apple-scented gum-tree	·12	·54	2425	1819	1·010	·850
	·14	·56	2170	1627	1·001	·834
viminalis—White gum-tree ...	·12	·65	2384	1788	·954	·797
	·12	·70	2195	1646	·916	·761
goniocalyx—Bastard box ...	·16	·50	2209	1658	·948	·807
	·20	·58	2050	1537	·937	·798
amygdalina—Peppermint-tree ...	·12	·65	2195	1646	1·045	·878
	·12	·70	2132	1599	1·076	·908
obliqua—Messmate	·12	·50	2053	1540	1·045	·867
	·14	·48	1776	1332	·935	·783

Results of Experiments on the transverse strength of timber other than Eucalyptus, by BARON VON MUELLER *and* J. G. LUEHMANN. *Specimens 2 feet long, 2 inches square.*

	DEFLECTION.		Total weight required to break each piece.	Value of strength $S=\frac{l\,w}{4\,b\,d^2}$	SPECIFIC GRAVITY.	
	With the apparatus weighing 780 lbs.	At the crisis of breaking.			Air dried.	Absolutely dried.
	inches.	inches.	lbs.			
Carya species hickory	·04	·60	3579	2684	·785	·665
	·05	·56	3388	2541	·808	·688
Fraxinus Americana — American white ash	·12	·54	2504	1878	·800	·696
	·12	·54	2640	1980	·604	·525
Quercus Alba — American white oak	·10	·62	2781	2086	·716	·612
	·12	.65	2192	1644	·669	·582
Acacia melanoxylon—Blackwood	·08	·50	2296	1722	·616	·529
	·08	·54	2261	1696	·625	·536
Dammara Australis—Kauri ...	·08	·42	2053	1540	·600	·518
	·08	·42	1967	1475	·613	·531
Pinus silvestris—Baltic deal ...	·17	·70	1811	1358	·541	·458
	·21	·48	1398	1048	·399	·346

Mr. Laslett obtained for English oak S=2117.

In Chambers's Mathematics the following quotations are given for S:—Ash, 2030; beech, 1560; birch, 1900; elm, 1030; fir, 1100 to 1140; larch, 1120; English oak, 1200 to 2260; Canadian oak, 1760; Red pine, 1340; poon, 2200; teak, 2460.

84. **Eucalyptus goniocalyx**, *F. v. Mueller.*

THE SPOTTED-GUM TREE. One of the White-gum trees; also, one of the Blue-gum Trees and Bastard Box. (*Sect. Leiophloiæ.*)

Confined to the more fertile ranges occurring in many parts of the colony. A moderate-sized or even gigantic tree; bark usually deciduous but sometimes persistent. Timber hard; employed for joists, beams, rafters, and heavy framing, as also by the cooper for staves. (*Jurors' Report*, 1866.) Its wood resembles in many respects that of *E. globulus.* (F. v. M.) Utilised likewise for wheelwright's work and ship-building. The bark yields a good packing paper. (F. v. Mueller.) Kino from this species is largely available. One hundred lbs. of fresh leaves gave 16 oz. essential oil.

85. **Eucalyptus gracillis**, *F. v. Mueller.*

(*Sect. Leiophloiæ.*)

In the Mallee scrub. A tall shrub or small tree, with silver-grey smooth bark.

86. **Eucalyptus Gunnii**, *J. Hooker.*

SWAMP-GUM TREE; CIDER TREE.

On wet alluvial flats and in moist forest valleys in the southern and eastern regions of the colony, ascending with *E. pauciflora* to alpine elevations. In the lowlands a large, spreading tree; in the uplands, gradually reduced to shrubby growth. Wood hard, fairly good for many purposes of artisans, but not splitting well; large dimensions of straight wood are not readily obtainable. The fermented sap affords a beverage somewhat like cider. (F. v. M.)

87. **Eucalyptus hemiphloia**, *F. v. Mueller.*

WHITE BOX or GREY BOX TREE. (*Sect. Rhytiphloiæ.*)

Occurs on open ridges in the Ovens, Broken River, and some other spots. A tree attaining 60 to 80 feet, with a dull green persistent bark, famous for the hardness and toughness of its timber. The vernacular names in use for most of the Eucalypts are, as a rule, ill-chosen. The term GUM-TREE is particularly objectionable, as this tree yields kino and not gum.

88. Eucalyptus incrassata, *Labillardière.*

(Sect. Leiophloiæ.)

One of the Mallee shrubs. A shrub or small tree, with a smooth bark, persistent, or shedding in large patches.

89. Eucalyptus largiflorens, *F. v. Mueller.*

(E. bicolor, A. Cunn.)

One of the BOX-TREES, also known as BASTARD-BOX. *(Sect. Hemiphloiæ.)*

In the Mallee scrub, and generally in the N.W. portion of Victoria. A large shrub, or sometimes a tree of 30 to 40 feet, with a persistent ash-grey or blackish bark. Wood very hard and exceedingly durable; good for shafts, poles, cogs, etc. (Woolls.) Timber redder, closer, softer, and more easily worked than the generality of Ironbarks; highly valued. (Moore.)

90. Eucalyptus leucoxylon, *F. v. Mueller.*

THE IRONBARK TREE, sometimes RED FLOWERING or BLACK IRONBARK-TREE. *(E. sideroxylon, A. Cunn.—Sect. Schizophloiæ.)*

On many of our less fertile ridges, usually indicating an auriferous country; gregarious. This is considered the strongest wood in our colony. It is much recommended for railway sleepers, and extensively used for underground mining work. It is very extensively employed for the handles of axes and other implements by Victorian manufacturers. A middle or large-sized tree, with usually a thick, rough, iron-grey bark, with deep, longitudinal fissures, which are strikingly characteristic; but with smooth whitish bark after the shedding of the outer layers. One of the hardest and heaviest of our native woods. It possesses great strength and tenacity, and has a close and straight grain, on which account it is highly useful to the coachmaker and wheelwright for the poles and shafts of carriages and the spokes of wheels. Its greasy nature also renders this wood very serviceable to the millwright for the cogs of heavy wheels. It is also valuable for many purposes in ship-building, and constitutes one of the most imperishable of our timbers. *(Jurors' Report,* 1866.*)* Specific gravity, 1·106 and 1·024; and yielded—charcoal, 28 per cent.; crude wood vinegar, 45 per cent.; and tar, 6 per cent. Kino is also largely available from this species. The bark is capable of being converted into a coarse paper; 100 lbs. of leaves gave 16 oz. 7 drs. of essential oil. Weight of a cubic foot of dry wood, from 63½ to 68½ lbs. (Baron von Mueller.) This tree is rich in kino.

91. **Eucalyptus longifolia,** *Link and Otto.*

THE WOOLLYBUTT-TREE. *(Sect. Hemiphloiæ.)*

Occurs in the E. portion of Gippsland. A tall, stately tree. Bark rough, fibrous, persistent, or partially deciduous. (F. Mueller.) Somewhat smooth, or fibrous and wrinkled, according to the size of the tree. (Woolls.) This timber bears a high character for durability when used for fencing purposes. For posts, it is said to stand undecayed in the ground for twenty years. The wood is esteemed an excellent fuel. It is sometimes split for fencing and rough carpenter's work. A beautiful solid wood, yet easily worked and well adapted for furniture. *(Jurors' Report,* 1866.) The Woollybutt grown at Illawarra is in very high repute for wheelwrights' work. (Sir W. Macarthur.) The fibre of the bark is adapted for packing paper. Specific gravity of wood, 1·187. The yield of essential oil from 100 lbs. of leaves, which had suffered in transit, was 3 oz. 3¼ drs. Weight of a cubic foot of dried wood, about 68½ lbs.

92. **Eucalyptus macrorrhyncha,** *F. v. Mueller.*

The ordinary Victorian STRINGYBARK-TREE.

In dry ranges at lower elevations than the usually taller Messmate Stringybark. The wood is hard and easily split into shingles, palings, and rails, and much sawn into weatherboards and scantlings for rough building purposes. The bark is more lasting than that of *E. obliqua* for roofing. (F. v. M.)

93. **Eucalyptus melliodora,** *Cunningham.*

YELLOW-BOX. *(Sect. Hemiphloiæ.)*

Especially in the S.E. and E. ranges of the colony on low open ridges particularly of the miocene formation. Yields a valuable timber of a light colour and greasy nature, which is remarkable for the hardness and closeness of its grain, its great strength and tenacity, and its durability both in the water and when placed in the ground. It is largely used by coachmakers and wheelwrights for the naves of wheels and for heavy framing, and by millwrights for the cogs of wheels. In shipbuilding it has numerous and important applications, and forms one of the best materials for treenails, and for working into large screws in this and other mechanical arts. (*Jurors' Report*, 1866.) Specific gravity of wood, 1·081 to 1·125. There is a sample of kino from this species in the Museum. Weight of a cubic foot of dry wood, from 67 to 70 lbs.

94. Eucalyptus obliqua, *L'Herétier.*

MESSMATE STRINGYBARK TREE. (*Sect. Pachyphloiæ.*)

In vast masses, constituting the prevalent timber on the more barren ranges in nearly all parts of our territory. A large, often a gigantic tree, the largest ranging from 300 to 400 feet in height. (F. Mueller.) Bark very thick, rugged, and fibrous. Timber hard, straight-grained. Although of an inferior class, it is used for a great variety of building purposes notwithstanding some liability to warp or twist. It splits with facility, affording posts, rails, and palings for fencing, also shingles for roofing. (*Jurors' Report*, 1866.) Supplies a good deal of second-class sawn timber in the market. Specific gravity of wood, 0·809 to 0·990. The paper prepared from the bark of this tree is not merely suited for packing, but also for printing, and even writing. It may also be employed for mill and pasteboards. The pulp bleaches readily. The bark is used for thatching in the Australian bush. Samples of wood-spirit, acetic acid, tar, and charcoal, prepared at the Phytochemical Laboratory, under the direction of Baron von Mueller, are in the Museum. Weight of a cubic foot of dry wood, from 50 to 60½ lbs.

95. Eucalyptus odorata, *Behr.*

One of the PEPPERMINT-TREES. (*Sect. Rhytiphloiæ.*)

In the coast-limestone formation towards the South Australian boundary; also in South-east Gippsland. Not a large tree.

96. Eucalyptus oleosa, *F. v. Mueller.*

(*Sect. Hemiphloiæ.*)

WATER-ROOTED GUM-TREE. WEIR-MALLEE.

In the Mallee scrub. A shrub or small tree, the bark of the trunk rough and persistent; that of the branches smooth. The essential oil, of which the yield is large, is employed chiefly in the manufacture of varnishes. It is a perfect solvent of Indiarubber without heat. Potash from this species is also contributed. The root retains much aqueous fluid even in the driest season.

97. Eucalyptus pauciflora, *Sieber.*

One of the White-gum trees. MOUNTAIN WHITE-GUM TREE. *(Sect. Leiophloiæ.)*

Mountain or marshy forests, ascending in the Alps to 5000 feet, where it forms rather extensive woods. A tree attaining sometimes a considerable height; exterior bark deciduous, the inner smooth and whitish. Wood not much valued; leaves in dry seasons eaten by cattle and horses. (Woolls.) Kino from this species available.

98. Eucalyptus pilularis, *Smith.*

The BLACKBUTT, or FLINTWOOD.

(Sect. Hemiphloiæ.)

Occurs in East Gippsland. A tree of considerable size, with dark-coloured rough or somewhat furrowed persistent bark towards the base. The bark smooth and falling off in flakes upwards and on the branches. This wood, which is of a clear grain and a reddish colour, is less known to our artisans than its apparent quality would seem to merit. It is excellent for house carpentry, ship-building, and indeed for any purpose where strength and durability are required. Specific gravity has been given at 0·897 and 0·803. *(Jurors' Report,* 1866.*)* A sample of essential oil will be found in the Museum. Weight of cubic foot of dry wood, 50 to 56 lbs.

99. Eucalyptus piperita, *Smith.*

WHITE STRINGYBARK-TREE.

In the ranges of Gippsland, but not common. A large tree; the wood not quite so good as that of some other kinds of Stringybark-trees, though fissile and used in the same manner. The foliage is available for profitable oil distillation. (F. v. M.)

100. Eucalyptus polyanthema, *Schauer.*

RED and GREY BOX-TREE and POPLAR-LEAVED GUM-TREE. *(Sect. Rhytiphloiæ.)*

Near the Pyrenees, on Upper Yarra, the Ovens, Broken River, and some other spots on open ridges. A tree sometimes small, sometimes attaining 40 to 50 feet, exceptionally rising much higher. (Falk.) Has an ash-grey, persistent, rough and furrowed bark. Timber used by wheelwrights for naves, felloes, and spokes. It is of a brown colour towards the centre, very hard, tough, and extremely strong. One of our best woods for fuel.

101. **Eucalyptus rostrata,** *Schlechtendal.*

THE RED GUM-TREE. One of the so-called Flooded-gums of N.S.W. *(Sect. Leiophloiæ.)*

Along river-flats and open valleys almost everywhere. (F. v. Mueller.) A tall spreading tree; bark greyish-white, smooth and separating in thin layers, rarely persistent, and rough. A very hard, compact wood, possessing a handsome, curled, but rather short grain; it is of a brown-red colour, and suitable for veneering purposes, for furniture, etc. It is largely used for fence posts. It is less subject to decay than most of the other timbers. When properly selected and seasoned, it is well adapted for many purposes in ship-building—such as heavy framing beams and knees. It is also used in the construction of culverts, bridges, wharves, and by wheelwrights for the felloes of heavy wheels, and is much approved of for railway sleepers and engine-buffers. It is almost entirely free from the tendency to longitudinal shrinkage, which is so characteristic of many other species of the Eucalypts, and is almost indestructible in damp ground or in water, either fresh or salt. Its defects are its short grain, which makes it untrustworthy for horizontal bearing timber in any but very short lengths; and it cannot easily be procured in long lengths and of a moderately small diameter—a point of some importance in piles, where it is desirable to have the whole section of the tree with its waning intact. Still, within a reasonable limit of length, it makes the best of all piles for engineering works, in consequence of the resistance it offers to the attacks of the *Teredo navalis*, and it cannot be surpassed for any purposes, either in engineering or building, where a resistance to sheer downward pressure is desired. It makes unequalled planking for bridges or wharves, and none but red-gum sleepers are considered first-class. *(Jurors' Report,* 1866.) Specific gravity of this wood has been stated at 0·858 and 0·923. Samples of essential oil, wood spirit, acetic acid, tar and charcoal, obtained from this tree, are in the Museum. Paper prepared from the bark of this species proves much coarser than that of *Eucalyptus obliqua;* the pulp may be either used in admixture with that for packing paper and pasteboard, or in the composition. (F. v. Mueller, in *Jurors' Report.*) The kino from *E. rostrata* is preferred to that from other species as a therapeutic astringent.

A ton of dry wood yields approximately 4 lbs. of pearlash or 2¼ lbs. of pure potash. Weight of cubic foot of dry wood from 53½ to 57½ lbs.

102. **Eucalyptus Siberiana,** *F. v. Mueller.*

One of the so-called MOUNTAIN-ASHES; also named sometimes GUM-TOP and IRON-BARK TREE.

At the Upper Yarra; also in various parts of Gippsland. A tree attaining a height over 150 feet. Wood, light, tough, and elastic. (Howitt.) Used for carriage and dray shafts, boat-building, and many other purposes. It can readily be split, and is also otherwise easy to work. For fuel it is excellent also, burning well even when freshly cut. (F. v. M.)

103. **Eucalyptus stellulata,** *Sieber.*

One of the BOX-TREES, WHITE-GUM, LEAD OR GREEN GUM-TREE of East Gippsland. *(Sect. Leiophloiæ.)*

Ascends into the sub-alpine regions from the Fern-tree gullies; Stoney Hills towards Lake Omeo sub-alpine ranges near Mount Barkly ranges, on the Macalister River and on the Upper Genoa River. A small tree, the furrowed bark coming off at length in layers (F. v. Mueller); rugose below, very smooth above, and of a lead colour.

104. **Eucalyptus Stuartiana,** *F. v. Mueller.*

APPLE-SCENTED EUCALYPT. *(Sect. Hemiphloiæ.)*

Occupies many moist, sandy tracts in the plains, as well as low ridges, extending to the western frontier. A tree of medium size. Bark rough and fibrous. The timber of this species is both durable and tough. Occasionally used for fence posts, but mostly for fuel. A sample of oil from the leaves of this Eucalypt may be seen in the Museum. The bark of this tree furnishes good material for packing paper and pasteboard, and has yielded, according to the published researches of Baron von Mueller and Mr. Hoffmann, 4·6 of tannic, and 0·7 per cent. of gallic acids.

105. **Eucalyptus tereticornis,** *Smith.*

Variously called GREY GUM-TREE, BLUE GUM-TREE, FLOODED GUM-TREE, RED GUM-TREE. *(Sect Leiophloiæ.)*

Occurring on Snowy River, Mitchell River, and elsewhere in East Gippsland. A tall tree, with smooth whitish or ash-coloured bark, shedding in thin layers. This wood is prized in some districts more than others, but when Ironbark cannot be procured it is always considered suitable for rails and posts, as well as for fuel. (Woolls.) An excellent timber, much used for plough-beams, poles and shafts for drays and carts, spokes of wheels, as well as in ship-building. (Moore.) This species is very closely allied to *E. rostrata.*

106. **Eucalyptus uncinata,** *Turczaninow.*

One of the MALLEE GUM-TREES. *(Sect. Leiophloiæ.)*

Desert of the Murray River, Wimmera, and Avoca. A tall shrub, with smooth or ash-grey bark coming off in coriaceous plates. Yields from the foliage a comparatively large quantity of oil by distillation.

107. **Eucalyptus viminalis,** *Labillardière.*

THE MANNA GUM-TREE, DROOPING GUM; called WHITE GUM-TREE. *(Sect. Leiophloiæ.)*

A middle-sized tree, scattered extensively over rather open grassy ridges and plains, impressing on them often a park-like appearance; in moist forest valleys attaining an enormous height. Outer bark frequently rough and deciduous. The wood is not much esteemed. Specific gravity of timber has been stated as 0·685; 100 lbs. of fresh leaves yielded only 5 1-7th drachms essential oil. A sample of kino from this species will be found in the Museum. A ton of dry wood yields about 3¼ lbs. of crude potash or 1¾ lbs. of pure potash. Weight of cubic foot of dry wood, about 43 lbs.

108. **Eugenia Smithii,** *Poiret.*

(Acmena floribunda, D. C.)

MYRTLE TREE. *Natural Order—Myrtaceæ.*

Not rare from Sealers' Cove to east boundary of the colony, along rivers and glens. A splendid tree, with remarkably dark and shady foliage, attaining a height of 120 feet. Specific gravity of wood, 0·898 to 0·935. The bark yielded of tannic acid 16·9 per cent., and of gallic acid 3·6 per cent. Weight of dry wood per cubic foot, 56 to 58 lbs. (*Jurors' Report*, 1866.)

109. **Eupomatia laurina,** *R. Brown.*

Natural Order—Anonaceæ.

Occurring only in the most eastern part of Gippsland, where the tree attains the height of 40 feet. (F. Mueller.)

110. **Exocarpus cupressiformis,** *Labillardière.*

NATIVE CHERRY-TREE. *Natural Order—Santalaceæ.*

Widely distributed over the more fertile open ridges and through both barren and fertile forest ranges. A small or middle-sized tree. Wood suitable, from the closeness of its structure, for many of the purposes of the cabinetmakers and turners. It is soft, fine-grained timber, and the best for carving. (Lockhart Morton.) It is also used for tool-handles, spokes, gun-stocks, etc. (W. Archer, in *Tasmanian Report*, 1862.) Specific gravity of wood (Victorian specimen), 0·756 to 0·845. Weight of a cubic foot of dry wood, from 47 to 53 lbs.

111. **Exocarpus spartea,** *R. Brown.*

In the desert country on the Murray River. Of weeping habit. Specific gravity, 0·813.

112. **Exocarpus stricta,** *R. Brown.*

Through the greater part of the colony. Rather of shrubby than arboreous growth.

113. **Fagus Cunninghami,** *Hooker.*

THE EVERGREEN BEECH, sometimes called NATIVE MYRTLE TREE. *Natural Order—Cupuliferæ.*

In the most secluded recesses of the mountains, from Dandenong to Mount Baw-Baw, on the various remote sources of the

Latrobe River, at Wilson's Promontory, and in the Cape Otway Ranges. A magnificent tree, attaining a height of 200 feet. On the Mount Baw-Baw Ranges this beech mainly constitutes the forest for many miles. (F. v. Mueller.) It has a reddish coloured wood, much employed by cabinetmakers for various articles of furniture. Very large planks of it are obtained of a highly beautiful grain and figure, and when polished its ornamental character is sure to attract attention. It is also used for the cogs of wheels by millwrights. Average specific gravity, 0.883. Weight of a cubic foot of dry wood, about 55 lbs.

114. **Ficus scabra,** *Forster.*

THE NATIVE FIG TREE. *Natural Order—Urticaceæ.*

Here restricted to the most eastern regions of Gippsland. An evergreen tree of medium size. Height up to 100 feet. Timber brittle. Fruit edible.

115. **Geijera salicifolia,** *Schott.*

Natural Order—Rutaceæ.

With us confined to the desert on the River Murray, where it is only a small tree or shrub. The wood is close, tough, light brown in colour, and nicely marked.

116. **Goodia lotifolia,** *Salisbury.*

Natural Order—Leguminosæ.

In many parts of the colony. A small tree or shrub. Foliage hurtful to cattle and sheep. (Dr. Lloyd.)

117. **Grevillea variabilis,** *Lindley.*

Grampians, Wimmera, and on a few adjacent plains. A shrub often many feet in height.

118. **Hakea acicularis,** *R. Brown.*

Natural Order—Proteaceæ.

Wilson's Promontory, Macalister River, and ranges near Steiglitz. Shrubby or seldom arborescent species. Source of a gum-resin.

119. **Hakea eriantha,** *R. Brown.*

East Gippsland. A tree of small size.

120. **Hakea flexilis,** *F. v. Mueller.*

North-west districts of the colony. A tall shrub or small tree of about 20 feet.

121. **Hakea nodosa,** *R. Brown.*

In the southern portions of the colony. Shrubby only.

122. **Hakea pugioniformis,** *Cavanilles.*

In many localities. Shrubby only.

123. **Hakea leucoptera,** *R. Brown.*

THE WATER TREE.

In the desert regions. Never a tall tree. Good drinking water is got from the fleshy roots of this bush in the arid districts in which it grows. The bark is useful for tanning; the wood takes a good polish, and is used for making tobacco-pipes, cigarette-holders, etc. Specific gravity of wood, 0·818; weight of a cubic foot, about 51 lbs.

124. **Hakea ulicina,** *R. Brown.*

Not uncommon. Only of shrubby size.

125. **Hedycarya Cunninghami,** *Tulasne.*

NATIVE MULBERRY. *Natural Order — Monimiaceæ.*

Following the rivulets of our humid southern ranges. A small or middle-sized tree, with comparatively soft wood of a beautiful shade quite available for cabinetwork. *(Jurors' Report,* 1862.)

126. **Helichrysum ferrugineum,** *Lessing.*

(Ozothamnus ferrugineus, R. Brown.)

Natural Order—Compositæ.

Common in the southern and middle districts of the colony. More a shrub than a tree.

127. **Heterodendron oleifolium,** *Desfontaines.*

Natural Order—Sapindaceæ.

Mallee scrub on the Rivers Murray, Wimmera, and Avoca. A tall shrub. Specific gravity of wood, 0·858; or weight of a cubic foot, 53 lbs. Timber hard and heavy; used for rollers and rolling-pins.

128. **Howitta trilocularis,** *F. v. Mueller.*

Natural Order—Malvaceæ.

On bushy declivities of the Victoria Ranges at Mount Arapiles; on shrubby ranges around Lake King; in coast ravines towards Cape Howe; on the banks of the Lower Genoa River. An erect, flexible shrub, attaining under favourable conditions the height of fully 20 feet.

129. **Hymenanthera Banksii,** *F. v. Mueller.*

Natural Order—Violarinæ.

Not rare in the southern and south-eastern parts of the colony from the marshy lowlands to the highest summits of the Australian Alps. A stout shrub, many feet high, except in alpine localities. The wood is of a bright yellow colour and exceedingly hard.

130. **Kunzea corifolia,** *Reichenbach.*

Natural Order—Myrtaceæ.

Wilson's Promontory, Genoa River, Glenny Island. A tall shrub.

131. **Kunzea peduncularis,** *F. v. Mueller.*

Snowy River and Macalister River. A tall shrub or sometimes a small tree. The wood is tough, and is used by the aboriginals for weapons.

132. **Leptospermum flavescens,** *Smith.*

Natural Order—Myrtaceæ.

Buffalo Ranges, Yarra, Goulburn, and Ovens Rivers. Usually a tall shrub. The wood is hard, close-grained, and tough.

133. **Leptospermum lævigatum,** *F. v. Mueller.*

THE COAST TEA-TREE. *(Fabricia lævigata, Gærtn.)*

Everywhere on the sandy coast. Never a large tree. Most important for fixing coast-sands.

134. **Leptospermum lanigerum,** *Smith.*

Widely distributed in moist localities, particularly along rivers and around swamps. The wood is hard, heavy, and durable. Used for hop-poles.

135. **Leptomeria aphylla,** *R. Brown.*

Natural Order—Santalaceæ.

Grampians, Murray River, and Mount Korong.

136. **Leucopogon Richei,** *R. Brown.*

(Styphelia Richei, Labillard.) Natural Order—Epacrideæ.

On sand and rocky sea-coasts, common. A tall shrub or small tree. Exceedingly heavy. Used for the knees of boats.

137. **Livistonia Australis,** *Martius.*

Our FAN-PALM. *Natural Order—Palmæ.*

East Gippsland. Attaining a height of 80 feet. Its terminal bud affords the palm-cabbage, whilst the leaves are sought as material for the manufacture of hats.

138. **Lomatia Fraseri,** *R. Brown.*

Natural Order—Proteaceæ.

In the deep ravines of our southern and eastern ranges, in forest valleys, especially among Fern-trees, but ascending to high cold elevations along the rivulets; not very common. A good-sized tree, the wood tough and durable, serviceable for furniture. Specific gravity of dry wood 0·678, in one experiment.

139. **Lomatia longifolia,** *R. Brown.*

A tall shrub or small tree. In irrigated forest valleys, particularly of the uplands. A light-coloured wood, very hard, with a beautiful small figure; works well for turnery. (Extracts from *Jurors' Report*, London Ex., 1862.)

140. **Melaleuca armillaris,** *Smith.*

Natural Order—Myrtaceæ.

Known in Victoria only from East Gippsland. A small tree. Wood hard and durable; useful for underground, inside, or water work.

141. **Melaleuca decussata,** *R. Brown.*

Common on river banks on the south-eastern extremity of the colony. A tall glabrous shrub, sometimes a small tree. This wood is hard and tough; used for poles. Its leaves and branchlets yields an essential oil. Specific gravity 0·938.

142. **Melaleuca ericifolia,** *Smith.*

THE SWAMP TEA-TREE.

The so-called Tea-tree, though never used for preparing any beverage. It fills most of our brackish as well as freshwater swamps, and lines also innumerable watercourses. It is seldom a large tree, but, on the contrary, generally small, though it may be seen occasionally 50 to 60 feet high. The wood is close-grained. In Tasmania it is used chiefly for turnery. It yielded on experiment—charcoal, about 28 per cent.; crude wood vinegar, 46 per cent.; and tar, 7 per cent. The friable lamellar bark can be converted into an excellent blotting, perhaps also filtering paper; 100 lbs. of leaves and smaller branches gave by distillation 5 ozs. of an essential oil, resembling that of cajuput, from *M. leucodendron.* The material in enormous quantities is obtainable in most parts of the colony. A ton of dry wood yields about 16½ lbs. of crude potash, equal to 4½ lbs. chemically pure potash. (F. v. Mueller.)

143. **Melaleuca parviflora,** *Lindley.*

(M. curvifolia, Schl.; M. Preissiana, Schauer.)

Observed along the coast-tracks, particularly on sand, and also in the sub-saline desert parts of Victoria. A small or middle-sized tree. Specific gravity of wood, 0·993; 100 lbs. of the leaves and branchlets of this species yielded about 6 ozs. of an essential oil, resembling that of cajuput very closely. The material is largely obtainable in the Murray desert and also on the coast. (*Jurors' Report,* 1861, page 40.) Weight of a cubic foot of dry wood, about 62 lbs. The wood is heavy, white, close-grained, and durable.

144. **Melaleuca squarrosa,** *Smith.*

Moist heaths and marshes, not rare. A tree developed in morassy forest glens to the height of 80 feet, the stem attaining then a diameter of 2 to 3 feet, usually, however, shrubby, the bark consisting of innumerable friable papyraceous layers.

145. **Monotoca elliptica,** *R. Brown.*

Natural Order—Epacrideæ. (Styphelia ellipticæ, Sm.)

In heathy coast tracks not rare. Never of large size. Wood useful for tools, particularly for planes and mallets; works well, and is indeed superior to English beech for such purposes. (Extracts from *Jurors' Report,* London Ex., 1862.)

146. **Myoporum Cunninghami,** *Bentham.*

Natural Order—Myoporinæ.

In the north-west desert. A small tree. The timber is soft, light, and tough.

147. **Myoporum deserti,** *Cunningham.*

(M. dulce, Benth.)

Restricted to the north-western portion of the colony; shrubby merely. This appears to be a well authenticated poison plant, but apparently only when in fruit.

148. **Myoporum insulare,** *R. Brown.*

In considerable quantity, available in the marshes and sand-tracts of the coast, also in the somewhat saline portions of the desert; over other parts of the colony but sparingly distributed. A small or middle-sized tree. Yields a beautiful light-coloured wood, which has been used for inlaying. Specific gravity, 0·809 to 0·819; or weight of a cubic foot, 50 to 51 lbs. The berries are edible.

149. **Myoporum platycarpum,** *R. Brown.*

THE SUGAR-TREE *(Disoon platycarpus, F.M.)*

In the Mallee scrub. A small tree, exuding from its bark a saccharine substance. Specific gravity of wood, 0·840, or weight of a cubic foot, 52½ lbs., according to a solitary experiment. It is suitable for veneering and cabinetwork

150. **Myrsine variabilis,** *R. Brown.*

Natural Order—Myrsineæ.

In the forest glens, and on river banks in the southern and eastern parts of the colony. Generally a small, occasionally a middle-sized tree. Specific gravity of wood, 0·714, or weight of a cubic foot, 44½ lbs., according to one experiment by Mr. Osborne. Wood is yellow, hard, and tough.

151. **Nephelium leiocarpum,** *F. v. Mueller.*

Natural Order—Sapindaceæ.

On the south-eastern boundary of the colony. A beautiful tree. The timber sometimes ornamental.

152. **Notelæa ligustrina,** *Ventenat.*

SPURIOUS OLIVE. *Natural Order—Oleaceæ.*

Found on shady torrents in the southern portion of the colony, but seldom elsewhere. A tree of small dimensions. This is the Heartwood of Tasmania. Wood very hard, and yields a very peculiar figure. (Extracts from *Jurors' Report,* Lond. Ex., 1862.)

153. **Panax Murrayi,** *F. v. Mueller.*

PALM-PANAX. *Natural Order—Araliaceæ.*

In Victorian territory only to be found on the south-eastern boundary of New South Wales. The slender, palm-like stem attains seldom above 1 foot in diameter, though not rarely a height of 80 feet. The wood is singularly light and soft; is white and has a large pith. Specific gravity, 0·348, or weight of a cubic foot nearly 22 lbs., according to one experiment.

154. **Panax sambucifolius,** *Sieber.*

In forest valleys, particularly in the Fern-tree gullies. A small tree only; in Victoria it constitutes the variety *hypoglama.*

155. **Persoonia arborea,** *R. Brown.*

Natural Order—Proteaceæ.

In the Fern-tree gullies, only on the south-western base of our Alps. The tallest of all the species of this genus, reaching a height of fully 30 feet. A handsome timber.

156. **Persoonia linearis,** *R. Brown.*

Not extending westward of Gippsland. A small, crooked tree, singular for the scarious lamellæ of its red bark. Wood close, prettily marked; will yield handsome veneers. (Sir William Macarthur.)

157. **Persoonia rigida,** *R. Brown.*

Grampians, Mount Alexander, Buffalo Ranges, and mountains on the Hume River. A shrub of good size, but never a tree. Used for tool handles.

158. **Pimelea microcephala,** *R. Brown.*

Natural Order—Thymeleæ.

In the north-western desert. A tall shrub. Bark extremely tough and acrid. Specific gravity of wood, 0·883.

159. **Pittosporum bicolor,** *Hooker.*

WHITEWOOD. *Natural Order—Pittosporeæ.*

Chiefly in Fern-tree gullies. A small or occasionally a middle-sized tree. Wood valuable for handles of implements, and has been used for wood-engraving by Mr. F. Grosse. It is yellowish-white, very hard, and of uniform texture and colour; used in turnery. Once used for clubs by the Tasmanian natives. The tree yields a pale useful gum. Specific gravity of wood, 0·874, or weight of a cubic foot nearly 48 lbs.

160. **Pittosporum phillyroides,** *De Candolle.*

Restricted to the desert tracts—on sandy or barren stony declivities and plains, chiefly on limestone subsoil. A small tree, bitter in all its parts, yielding a gum similar to gum-arabic. Cattle are fond of the leaves.

161. **Pittosporum revolutum,** *Aiton.*

On lightly-timbered undulations and ridges near the south-eastern boundary of Gippsland. A shrub from several feet high attaining in favourably sheltered forest ravines the size of a small tree. White, dense wood.

162. **Pittosporum undulatum,** *Ventenat.*

FRAGRANT PITTOSPORUM.

In the humid forest glens from Western Port and Dandenong eastward throughout Gippsland. Attains in favourable localities a height of 80 feet, and a stem-diameter of 2 feet. The wood is tough, but easily worked. *(Jurors' Report,* 1862.) Wood excellent for turnery, and apparently adapted for wood-engraving, and favourably reported upon by Mr. De la Motte as to its suitability for this purpose. *(Jurors' Report,* London Ex., 1862.) The bark only yielded tannic acid 1·2 per cent., and gallic acid 0·7 per cent.; 100 lbs. of flowers gave on distillation 2 ozs. of essential oil of exquisite fragrance. (F. v. Mueller.)

163. **Plagianthus pulchellus,** *Gray.*

One of the Currijongs. *Natural Order—Malvaceæ.*
(Sida pulchella Bonp.)

Not rare along banks of rivers and rivulets in the southern and middle parts of the colony. A tall, somewhat graveolent shrub, attaining a height of about 30 feet. Bark of the branches tough, and formerly worked up by the aborigines into cordage.

164. **Pomaderris apetala,** *Labillardière.*

Natural Order—Rhamnaceæ.

In forest glens and along wooded river banks; not rare in the southern and eastern parts of the colony, but never seen away from moist, shady, and sheltered forest valleys. A soft, useful wood, of pale colour, adapted for carvers' and turners' work *(Jurors' Report,* 1862), and, according to Dr. George Bennett, may be profitably employed in wood-engraving. Specific gravity of wood 0·772, or weight of a cubic foot 48 lbs.

165. **Pomaderris betulina,** *Cunningham.*

Genoa River. A shrub, or occasionally a small tree.

166. **Pomaderris elliptica,** *Labillardière.*

Following the course of rivers, particularly within the mountains; excelling *P. apetala* in height; of less extensive distribution: when away from the gullies reduced to shrubby growth.

167. **Pomaderris subrepanda,** *F. v. Mueller.*

In the southern parts of the colony, along the water-courses. A small tree only.

168. **Podocarpus alpina,** *R. Brown.*

Natural Order—Coniferæ. (Nageia alpina, F. v. M.)

On the Snowy Mountains. Usually depressed on the exposed summits of the Alps, erect in the nearest valleys, never tall; our only Alpine Pine. The wood is tough, silky, and fine in the grain; very durable.

169. **Prostanthera lasianthas,** *Labillardière.*

MINT-TREE. *Natural Order—Labiatæ.*

One of the most widely-diffused trees of our forest valleys, varying where well developed from 30 to 60 feet in height; diameter of stem about 1 foot, exceptionally 2 feet. The wood hard and tough. Specific gravity, 0·809. *(Jurors' Report,* 1862.) The saplings locally used for fishing-rods. Weight of a cubic foot of dry wood, 50½ lbs. The leaves of this and its many congeners afford aromatic oils on distillation. (F. v. M.)

170. **Prostanthera nivea,** *Cunningham.*

Mountains of Bacchus Marsh, Mount Korong, Mount Hope, Station Peak, etc. A beautiful shrub, but never large.

171. **Pultenæa altissima,** *F. v. Mueller.*

Natural Order—Leguminosæ.

East Gippsland. A tall shrub, but never truly arboreus.

172. **Sambucus xanthocarpa,** *F. v. Mueller.*

THE NATIVE ELDER-TREE. *Natural Order—Caprifoliaceæ.*

East Gippsland. Wood soft, light, and pale-coloured.

173. **Santalum acuminatum,** *De Candolle.*

NATIVE PEACH or QUANDONG. *Natural Order—Santalaceæ.*

In the Mallee scrub. Always a small tree. Specific gravity of wood, 0·828. Quandong nuts are strung for bracelets and mounted for pins. The fruit is of an agreeable acidulous taste, and usually every alternate year richly produced. The kernel of the fruit, which is also edible, is oleaginous. Wood probably fit for wood-engraving. (Moore.) Weight of a cubic foot of dry wood, about 51½ lbs.

174. **Santalum persicarium,** *F. v. Mueller.*

NATIVE SANDALWOOD.

In the Murray desert. A small tree. Specific gravity of wood 0·747, according to a solitary experiment by Mr. Osborne. The bark yields tannic acid.

175. **Senecio Bedfordii,** *F. v. Mueller.*

NATIVE DOGWOOD.

(Bedfordia salicina, D.C.)

Natural Order—Compositæ.

In Fern-tree gullies and in other shady and springy glens. A hard, pale-brown, well-mottled wood; good for turnery. *(Jurors'*

Report, London Ex., 1862.) Specific gravity 0·896 (Osborne). The down on the leaves may be of commercial value.

176. **Sponia aspera,** *Decaisne.*

(Trema cannabina, Lour.)

Natural Order—Urticeæ.

East Gippsland. A small tree. Produces an excellent strong fibre. The wood might be used for making gunpowder charcoal.

177. **Telopea oreades,** *F. v. Mueller.*

VICTORIAN WARATAH. *Natural Order—Proteaceæ.*

East Gippsland, on the highest mountains. A small tree; highly ornamental.

178. **Tristania laurina,** *R. Brown.*

Natural Order—Myrtaceæ.

Along the rivers of East Gippsland. Generally a small tree, but stems of 3 feet basal diameter have been met with. (C. Walter.) Wood close-grained, tough; used for machinery purposes, and apparently well adapted for the same. *(Jurors' Report*, London Ex., 1862.) Wood acquiring an exceedingly hard and bony texture when carefully seasoned; very apt to split if not dried with great precaution. A most valuable wood of its dimensions, and believed to be unmatched for cogs of wheels in machinery. (Sir W. Macarthur.)

179. **Viminaria denudata,** *Smith.*

Natural Order—Leguminosæ.

On swampy ground in the southern and eastern portions of the colony. A small tree or tall shrub. Wood soft and spongy. Specific gravity 0·623. (Osborne.)

180. **Vitis hypoglauca,** *F. v. Mueller.*

THE NATIVE GRAPE-VINE. *Natural Order—Viniferæ.*

East Gippsland. It attains to the size of a tree, with a comparatively stout stem. Wood soft and spongy, and of a grey colour.

181. **Xanthorrhœa Australis,** *R. Brown.*

GRASS-TREE. *Natural Order—Liliaceæ.*

In some heathy tracts extremely abundant. Stem varying from a few feet to 10 feet in height, usually crooked. The fragrant resin from this species, which is soluble in spirit, is of a deep amber colour, and is employed for staining wood to imitate cedar, for preparing varnishes, and as a source of picric acid.

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DESCRIPTIVE CATALOGUE

OF THE SPECIMENS OF

ROCKS OF VICTORIA

IN THE

Industrial and Technological Museum,

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INTRODUCTORY NOTE.

THE Descriptive Catalogue of the Specimens of Rocks of Victoria in the Industrial and Technological Museum was originally prepared in 1875 by Mr. G. H. F. Ulrich, F.G.S. (now Professor of Mining and Mineralogy in the University of Otago, N.Z.), then the Curator of this Collection. Mr. Ulrich adopted the classification of Dr. Zirkel, of Leipzig, consulting at the same time other authorities. The Catalogue having, to some extent, been used as a text-book, it has been deemed advisable to retain the system of classification, and all the additions to the Collection have been made to conform to it. The other Petrological Collections have also been classified according to the same system. In the Catalogue will be found explanatory notes which will render the Collection still more useful, and the Catalogue not merely a guide to this Collection, but a hand-book that can be used with great advantage in the study of the Rock formation of Victoria and adjoining Colonies. In the system of numbering adopted, the number before the first full-stop refers to the species to which the Specimen belongs, and that following to the number of the Specimen itself. As the Sedimentary Rocks have been stratigraphically sub-divided, the former number also refers to their age.

J. COSMO NEWBERY,

Superintendent of Museum.

System of Classification of the Rocks.

I.—CRYSTALLINE-GRANULAR SILICATE ROCKS.

I.—Feldspar Rocks.

A. Older Feldspar Rocks; Older Igneous or Plutonic Rocks.

1. Rocks in which the predominating Feldspar is Orthoclase:—
    - *a.* Quartzose Orthoclase Rocks.—Granite, Granite Porphyry, Felsite Porphyry.
    - *b.* Quartzless Orthoclase Rocks.—Syenite, Syenite Porphyry, etc.
2. Rocks in which the predominating Feldspar is triclinic (Plagioclase):—
    - *a.* Oligoclase Rocks.—Diorite and allied Rocks, Porphyrite, etc.
    - *b.* Labradorite Rocks.—Diabase and allied Rocks, Gabbro, etc.
    - *c.* Older Anorthite Rocks.—Older Eucrites, Protobastite Rock, etc.

B. Newer Feldspar Rocks; Newer Igneous or Volcanic Rocks.

1. Trachyte Series.
2. Nepheline and Leucite Rocks.
3. Basalt Series.
4. Newer Anorthite Rocks.

II.—Rocks of Special Character and Composition, mostly Without Feldspar.

II.—CRYSTALLINE-SCHISTOSE SILICATE ROCKS; METAMORPHIC ROCKS.

Gneiss, Granulite, Mica Schist, Chlorite Schist, Talc Schist, etc.

III.—AQUEOUS ROCKS; SEDIMENTARY OR STRATIFIED ROCKS.

- *a.* Mechanically-formed, Derivative, or Fragmentary Rocks.—Conglomerates, Breccias, Sandstones, Shales, Slates, etc.
- *b.* Chemically-formed Rocks.—Limestones, Coal, etc.

TABLE *illustrating the* CLASSIFICATION *of the* MIXED CRYSTALLINE FELDSPAR ROCKS, *according to their* CHARACTERISTIC MINERAL COMPONENTS, TEXTURE, *and* AGE.—*According to* DR. FERD. ZIRKEL.

Age.	Texture.	Orthoclase Rocks.				Plagioclase Rocks.					Nepheline Rocks.	Leucite Rocks.
		With Quartz.		Without Quartz.		With Hornblende (with and without Quartz).	With Augite (without Quartz).	With Diallage.	With Hypersthene.	With Mica.		
		Without Hornblende.	With Hornblende.	With or without Plagioclase.	With Elæolite or Nepheline.							
Older Rocks.	Granular.	Granite.	Syenite Granite.	Syenite.	Foyaite, Zircon-Syenite, Miascite, Ditroite.	DIORITE, *a* OLIGOCLASE-DIORITE, *b* Labradorite-Diorite, *c* Anorthite-Diorite (Corsite).	DIABASE, *a* Oligoclase-Diabase, *b* LABRADORITE-DIABASE, *c* Anorthite-Diabase (Eucrite).	Gabbro.	Hypersthenite.	Mica-Diorite.		
	Porphyritic.	Felsite-Porphyry.		Quartzless Orthoclase-Porphyry.	Orthoclase-Liebenerite-Porphyry.	Diorite-Porphyry, Hornblende-Porphyrite, Oligoclase-Porphyrite.	Diabase-Porphyry, Augite-Porphyry, Labradorite-Porphyry.	—	—	Mica-Porphyrite.		
	Aphanitic and half Glassy.	Felsite-Pitchstone.		—	—	Melaphyre, Aphanite.		—	—	—		
Newer Rocks.	Crypto-Crystalline and Porphyritic.	Liparite (Quartz-Trachyte, Rhyolite).		Trachyte.	Phonolite.	Andesite.	Dolerite, Anamesite, Feldspar-Basalt.	—	—	—	Nepheline-Dolerite, Nepheline-Basalt.	Leucitophyre, Leucite-Basalt.
	Glassy and Frothy.	**Obsidian, Trachyte-Pitchstone, Perlite, Pumice.**					**Tachylite.**					

I.

CRYSTALLINE-GRANULAR SILICATE ROCKS.

I.—FELDSPAR ROCKS.

A. OLDER FELDSPAR ROCKS; OLDER IGNEOUS OR PLUTONIC ROCKS.

I.—ROCKS IN WHICH THE PREDOMINATING FELDSPAR IS "ORTHOCLASE."

a. QUARTZOSE ORTHOCLASE ROCKS.

THE species of rocks of this subdivision represented in the collection are granite (and syenite-granite); granite porphyry (and syenite-granite porphyry); and felsite porphyry. Of these the first and last are the most important, the intermediate species occurring generally only as local modifications, without any defined boundaries within tracts of granite.

Granite—This rock occupies a considerable portion of the area of the colony, forming larger and smaller isolated tracts and massives, and arranged without any system or without following any defined axis—a mode of distribution which, according to Mr. Selwyn, seems to indicate the probability of the existence of the rock at no great depth beneath the entire surface of Victoria. Considering their physical features each granite tract generally exhibits one or more high culminating points or massive ridges, from which descend steep rocky spurs; these in their turn gradually merge into low swelling ridges, with here and there higher rounded bosses and broad grassy flats between. The higher points and spurs are in most cases quite bare, or support but a poor forest-growth of gum-tree (Eucalyptus), and, as specially characteristic, of she-oak (Casuarina) and honeysuckle (Banksia), which in most of the northern tracts is not even much improved in the lower country at foot, whilst in some of the southern ones (Gippsland) fine timber with dense undergrowth is prevalent. Wherever the low swelling ridges or the higher rounded bosses are bare of vegetation, and show vertical sections, we observe the peculiar concentric-tabular jointing—a special characteristic of granitic rocks. Isolated blocks of a more fine-grained texture than the rest, or two and three resting one upon the other—often in fanciful shapes—along the slopes or on the summits of the eminences, prove, by the gentle curvature of their top and resting-planes, to be the less destructible remains of as many concentric-tabular layers, long since disintegrated and removed. The boundaries of the granite areas, *i.e.*, their junctions with sedimentary rocks (principally silurian), are partly very irregular, on account of numberless bends and ramifications; partly singularly well defined, often in straight unbroken lines for long distances (Mount Alexander granite, near Elphinstone, etc.). The influence of the granite upon the bounding rocks will be noticed further on.

With few exceptions, all the varieties of granite known and described occur in Victoria, and are represented in the collection in all variations of texture, colour, and mode of composition. In the descriptions following, and those given on the labels, distinction has been made into *binary*, *ternary*, and *quaternary* granite, which qualifications refer to the number of the essential mineral components of the rock, *i.e.*, whether it contains 2, 3, or 4. For instance, a compound of *quartz*, *feldspar (orthoclase* and *oligoclase)*, and *mica*—constituting the typical granite—is called *common ternary*, whilst a replacement of one of these constituents by another mineral, for instance *hornblende*, *tourmaline*, *talc*, *epidote*, etc., is simply called *ternary*, and the modification mentioned. If a fourth mineral occurs in the rock, and by its mode of distribution or of association with the other three constituents appears as an essential component, the rock is called *quaternary*, and the new mineral noticed. It is generally one of the four just mentioned. In the case of one of the three essential components being absent, the rock is called *binary;* yet with a certain reservation, namely, regarding the binary compound of feldspar (orthoclase and oligoclase) and mica in granular mixture, it is considered nearer allied to *syenite*, and called *mica-syenite*, in contradistinction to the typical *hornblende-syenite;* whilst, if the mixture is porphyritic, *i.e.*, represents a feldspathic base, enclosing crystals of orthoclase and mica, it is called after the French *minette*, being in reality a *mica-orthoclase porphyry*. Amongst the specimens representing the binary granites in the collection is placed, however, a rather rare one, called *greisen*, a granular grey rock, composed of light-grey quartz and greyish, yellowish, and greenish mica; the former in coarse grains strongly predominating. Although the absence of feldspar in this rock renders its inclusion here inconsistent with the system of classification adopted, still, as it stands in intimate relation to granite, it can be regarded as a granite variety without feldspar. In fact, granite graduates into *greisen*, by a gradual decrease of the feldspar, the intermediate stages of which transformation may be considered either as *granite poor in feldspar*, or as *greisen*, containing—as it were—feldspar as an accessory constituent. It is an interesting fact that a very frequent accessory mineral of *greisen* in Europe, viz., *cassiterite* (tin ore), in small crystals and grains, has in this colony (Beechworth) also been found in it, and that the rock-mass from which the specimen in the collection was broken, occurs as in Europe, associated with the variety of granite called *tin-granite*, which is also represented in the collection.* Granite has, in this colony, not as yet been much used as a building stone, owing principally to the expense of working it on account of its hardness. The variety most abundant throughout Victoria, especially the western goldfields—a medium grained rock, composed of white feldspar, greyish-white quartz, and black mica—though not of a very ornamental appearance, forms nevertheless a fine durable building stone, and can be procured at many places in large solid blocks. At Harcourt, near Mount Alexander, extensive quarries have been opened in it, from which very large solid masses have been extracted; for instance, the square block, many cubic yards in size, covering the grave of Burke and Wills, the explorers, in the Melbourne General Cemetery; those used for Burke's monument at Castlemaine; and for Burke and Wills' monument in Melbourne, etc. The adaptability of this granite as a building stone is seen to advantage in the handsome building of the "Equitable Life Assurance Company of U.S." Gellibrand's Hill, section 8, parish of Will-Will-Rook, has also furnished good building stone; for instance, Prince's Bridge. A fine ornamental kind—a *syenite-granite* containing red feldspar and greenish hornblende—occurs at Gabo Island and other places in Gippsland, that of the former place having been used for the General Post Office, the Custom House, and the Australasian Insurance Company's Offices. With regard to the moot point, whether granite is auriferous,

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* At the Elsmore tin mine, near Inverell, New South Wales, "greisen" occurs under quite similar circumstances.

i.e., contains gold impregnated or is traversed by auriferous quartz veins, the workings on the Nuggety Reef, near Maldon, have furnished valuable and interesting data. This celebrated reef does not in fact traverse the granite itself, but terminates against it; it is, on the contrary, traversed by several granite veins.† The lines of contact of the reef-quartz and these intrusive veins are not, however, sharp and defined; but the quartz becomes, by increasing accession of feldspar and mica, gradually transformed into granite, and within this zone of transformation, as it were, specs of gold and of the rare mineral *maldonite* (an alloy of gold and bismuth) have been found in places quite richly impregnated. In the massive granite no gold has yet been discovered. The auriferous character of the alluvial and older drifts of gullies and creek valleys, running through granite areas (for instance, at Beechworth, Maldon, Kingower, Moliagul, etc.), also cannot be considered as proof of the gold-bearing character of the rock, for the reason that the drift in its composition affords strong evidence of its being in part derived from denuded silurian rocks. In some cases this origin of the drift can be clearly established by the fact that these gullies and creeks rise in silurian ranges outside the granite areas; but even where this latter feature does not occur, we cannot explain the presence of silurian material in the drift, otherwise than by supposing that silurian rocks once existed within the drainage area of such drift-channels.

As regards accessory minerals, besides *hornblende*, *black tourmaline (schorl)*, *tin-ore* and *epidote*, which constitute special varieties of the rock, the granites of the colony are, in comparison with those of other countries, rather poor. The most frequent are—*garnet*, in fine crystals at Beechworth and Chiltern; *chlorite*, in small nests in same localities; *fluorspar*, in small patches, poorly crystallised, same localities; *amethyst*, finely crystallised in druse-cavities and veins, same localities; *rutile*, in small impregnated crystals at Maldon; *andalusite*, in crystals, same locality; *cordierite* (*Iolite*) in grains and imperfect crystals, Traawool; also in *pegmatite*, Maldon; *molybdenite*, in small patches and crystals, at Yackandandah, Maldon, Mount Moliagul, etc.; *iron-glance*, in small plates and scales, at Mount Korong; *iron pyrites*, in crystals and grains, generally distributed. It may also be mentioned that those peculiar mineralogical phenomena—the so-called *enhydros*, or *waterstones*, *i.e.*, irregularly polygonal, sharp angular hollow bodies of chalcedony, containing fluid and gas bubbles—occur in decomposed granite beneath gold-drift at Beechworth.

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† See note accompanying the Geological ¼ sheet of the Maldon district.

Felsite Porphyry.—Several varieties of this species, as hornstone porphyry, eurite porphyry, elvanite, quartz porphyry, etc., occur as dykes of sometimes considerable dimensions, and in larger intrusive masses. Of these latter, the best known are Mount Macedon, Dryden's Rock, and the Dandenong Ranges; a patch in the valley of the Wannon, near Hamilton; and one, the most extensive, in Gippsland, at Buchan, bounding the Snowy River on the west. No minerals of any value have as yet been found in this rock, which hitherto has proved useful only as a pretty good road metal.

GRANITE.

1.1. **Granite.**—Common ternary; coarse-grained, and rather feldspathic; contains orthoclase of bluish-white and pale pink colour; also small particles of whitish oligoclase.—*Excelsior Claim, Reid's Creek, Beechworth.*

1.2. **Granite.**—Common ternary; coarse-grained, and rather feldspathic; contains some oligoclase.—*One-tree Hill, Beechworth.*

1.3. **Granite.**—Common ternary. This specimen is composed of a coarse-grained, rather feldspathic portion in conjunction with a fine-grained rather quartzose one.—*Neighbourhood of Hensley's Tin-lode, Beechworth.*

1.4. **Granite.**—Common ternary; rather coarse-grained and feldspathic; some of the feldspar is oligoclase.—*Spring Creek, Beechworth.*

1.5. **Granite.**—Common ternary; rather coarse-grained; contains much oliogoclase.—*Ten chains south of old slaughter-yard, Beechworth.*

1.6. **Granite.**—Common ternary; fine-grained and very coarse-grained feldspathic portions mixed, the latter having in places the appearance of graphic-granite; contains some oligoclase.—*Tail-race, Wooragee Creek, Beechworth.*

1.7. **Granite.**—Common ternary; medium-grained; quartz rather predominating and forming the largest grains; contains some oligoclase.—*Mount Alexander. Geological ¼ sheet* 13 *N. W.*

1.8. **Granite.**—Common ternary; very coarse-grained and feldspathic portion in conjunction with fine-grained one.—*From a vein in massive granite near Dargan's Creek.*

1.9. GRANITE.—Common ternary; very coarse-grained and feldspathic; contains some oligoclase.—*Station Peak, near Geelong. Geological ¼ sheet* 20 *S. W.*

1.10. GRANITE.—Common ternary; medium-grained; in conjunction with black, dense, slightly porphyritic, metamorphic rock (hornfels).—*Baringhup. Geological ¼ sheet* 14 *S. W.*

1.11. GRANITE.—Common ternary; rather coarse-grained quartz forming the largest grains.—*Harcourt quarries, near Mount Alexander. Geological ¼ sheet* 13 *N. W.*

1.12. GRANITE.—Common ternary; coarse-grained, feldspathic portion in junction with very fine-grained quartzose one; the former shows some oligoclase.—*Station Peak, near Geelong. Geological ¼ sheet* 20 *S. W.*

1.13. GRANITE.—Common ternary; coarse and fine-grained granite portions parted by a seam of fine-granular quartz.—*Station Peak, near Geelong. Geological ¼ sheet* 20 *S. W.*

1.14. GRANITE.—Common ternary; rather fine-grained; encloses large patches of orthoclase.—*Dog Rocks, near Geelong.*

1.15. GRANITE.—Common ternary; rather fine-grained, with larger patches of feldspar and quartz.—*Dog Rocks, near Geelong.*

1.16. GRANITE.—Common ternary; medium-grained; contains some oligoclase.—*Mill-road, four miles from Beechworth.*

1.17. GRANITE.—Common ternary; fine-grained, with a slightly porphyritic aspect, due to enclosed larger patches of feldspar, smoky quartz, and black mica.—*Newtown quarries, Beechworth.*

1.18. GRANITE.—Common ternary, with but little mica; very coarse-grained; feldspar slightly decomposed.—*Saddle in range east of Pound Creek, Beechworth.*

1.19. GRANITE.—Common ternary; very coarse-grained and feldspathic; mica of black and white colour; encloses patches of schorl (black tourmaline).—*From a vein in silurian rocks near top of Mount Tarrangower. Geological ¼ sheet* 14 *S. W.*

1.20. GRANITE.—Common ternary; very fine-grained portions poor in mica, mixed with highly micaceous ones, and enclosing large patches and crystals of orthoclase.—*Inglewood.*

1.21. GRANITE.—Same as No. 1.20.—*Inglewood.*

1.22. GRANITE.—Common ternary; coarse-grained portion in conjunction with fine-grained one; encloses a large patch of crystallised schorl (black tourmaline); feldspar slightly decomposed.—*From near Mount Tarrangower. Geological ¼ sheet* 14 *S. W.*

1.23. GRANITE.—Common ternary; coarse-grained and rather feldspathic; feldspar slightly affected by decomposition. —*Mount Korong.*

1.24. GRANITE.—Common ternary coarse-grained; quartz slightly predominating and forming the larger grains.—*Mount Kingower.*

1.25. GRANITE.—Common ternary; very coarse-grained and traversed by veins of chalcedony.—*Spring Creek, Beechworth.*

1.26. GRANITE.—Common ternary; fine-grained.—*Spring Creek, Beechworth.*

1.27. GRANITE.—Common ternary, but poor in mica; medium-grained, and somewhat affected by decomposition; rusty colour, due to percolation of ferruginous waters.—*Mount Beckworth.*

1.28. GRANITE.—Common ternary; coarse-grained and highly quartzose; portions consist of nearly pure quartz.—*North side of Pound Creek, Beechworth.*

1.29. GRANITE.—Common ternary, but very poor in quartz; structure imperfectly laminated, resembling that of gneiss; feldspar slightly affected by decomposition.—*Pennyweight Flat, Beechworth.*

1.30. GRANITE.—Common ternary, but very poor in mica; quartz of a dark smoky colour; contains a considerable percentage of yellowish-coloured oligoclase.—*Mill-road, three miles from Beechworth.*

1.31. GRANITE.—Common ternary; medium-grained, and rather feldspathic. The peculiar mode of the distribution of the black mica imparts to it a porphyritic aspect.—*Mount Korong.*

1.32. GRANITE.—Common ternary, but very poor in mica; slightly affected by decomposition.—*Mount Beckworth.*

1.33. GRANITE.—Common ternary; fine-grained and rather micaceous.—*Mount Beckworth.*

1.34. GRANITE.—Common ternary; fine-grained and very micaceous.—*Mount Kingower.*

1.35. GRANITE.—Common ternary; main mass rather fine-grained, and rendered porphyritic by larger crystals of orthoclase and patches of quartz; feldspar rather granular, and devoid of lustre on account of partial decomposition.—*Inglewood.*

1.36. GRANITE.—Common ternary; rather fine-grained and poor in mica; larger patches of feldspar impart to it a mottled appearance.—*Mount Beckworth.*

1.37. GRANITE.—Common ternary; black mica strikingly predominating; medium-grained.—*Excelsior Claim, Reid's Creek, Beechworth.*

1.38. GRANITE.—Common ternary; rather fine-grained; mica scattered in small quantity.—*Bendigo.*

1.39. GRANITE.—Common ternary; rather feldspathic; medium-grained; occurs as pebbles in upper palæozoic conglomerate.—*N.E. of Mia-mia. Geological* ¼ *sheet* 13 *N.E. Note* 40.

1.40. GRANITE.—Common ternary, but very poor in mica, flesh-coloured orthoclase predominating; very coarse-grained; would form a handsome building stone.—*Tail-race, Wooragee Creek, Beechworth.*

1.41. GRANITE.—Common ternary, but poor in mica; very coarse-grained and feldspathic; feldspar of fine flesh-colour; bears a strong resemblance to No. 1.40.—*Gabo Island.*

1.42. GRANITE.—Common ternary; contains black and white mica; coarse-grained.—*Pyramid Rock, Phillip Island.*

1.43. GRANITE.—Common ternary; flesh-coloured orthoclase greatly predominating; rather poor in quartz; mica black, green, and white; encloses small patches of chlorite; very coarse-grained.—*Gabo Island.*

1.44. GRANITE.—Common ternary, but poor in mica, mottled white and pink coloured orthoclase predominating; medium-grained.— *Mount Beckworth.*

1.45. GRANITE.—Common ternary; rather feldspathic, some of the feldspar being oligoclase; medium-grained.—*Inglewood.*

1.46. GRANITE.—Common ternary, but very poor in mica; one portion rather feldspathic and coloured brownish by ferruginous infiltrations; in the remainder the black spots appear to be due to manganiferous brown iron-ore; medium-grained.—*Mount Beckworth.*

1.47. GRANITE.—Common ternary; in part very micaceous; rather fine-grained.—*Mount Beckworth.*

1.48. GRANITE.—Common ternary; rather feldspathic; medium-grained.—*Eastern slope of Mount Baw-baw, near Walhalla.*

1.49. GRANITE.—Common ternary; a rather fine and even-grained mixture of white feldspar, quartz, and white mica, with a few small patches of black tourmaline (schorl), and a few grains of brown garnet; some of the feldspar is triclinic (albite?) structure of the rock apparently tabular.—*Mount Korong.*

1.50. GRANITE.—Common ternary, but rather poor in mica; medium-grained; encloses large patches of quartz and orthoclase.—*From between Violet Town and Seymour.*

1.51. GRANITE.—Common ternary; medium-grained; encloses larger patches of quartz.—*From between Violet Town and Seymour.*

1.52. GRANITE.—Common ternary, but poor in mica, feldspar predominating; very fine-grained.—*Mount Beckworth.*

1.53. GRANITE.—Common ternary; very fine-grained; consists of a rather decomposed highly feldspathic base enclosing larger patches of greenish-white mica.—*Tail-race, Wooragee Creek, Beechworth.*

1.54. GRANITE.—Common ternary, but poor in mica; fine-grained very feldspathic base, rendered in part porphyritic by larger patches of quartz.—*Mount Beckworth.*

1.55. GRANITE.—Common ternary, but poor in mica; rather fine-grained.—*Mount Beckworth.*

1.56. GRANITE.—Common ternary, but very poor in mica; fine-grained; portion of a vein of coarse-grained granite containing oligoclase visible along one edge.—*Eumemerring Creek, Robinson's Station.*

1.57. GRANITE.—Common ternary, rather feldspathic; very fine-grained.—*Back track to Wooragee, Beechworth.*

1.58. GRANITE.—Common ternary; fine-granular mixture of orthoclase, some oligoclase, white mica, and quartz.—*Neighbourhood of Ballarat.*

1.59. GRANITE.—Common ternary; quartzose and very micaceous in part; extremely fine-grained.—*From close to boundary of lower silurian rocks, Loddon River, near Mount Tarrangower.*

1.60. GRANITE.—Common ternary; very micaceous and fine-grained.—*From close to boundary of lower silurian rocks, Loddon River, near Baringhup. Geological ¼ sheet* 14 S.W.

1.61. GRANITITE.—Common ternary; coarse-grained; contains quartz, much greenish-white oligoclase, flesh-coloured orthoclase, and little black mica.—*Occurs as pebbles in upper palæozoic conglomerate north-east of Mia-mia. Geological ¼ sheet* 13 *N.E. Note* 40.

1.62. GRANITITE.—Common ternary; very rich in greyish-green oligoclase, easily distinguishable from the flesh-coloured orthoclase; medium-grained; would form a handsome building stone.—*Pyramid Rock, Phillip Island.*

1.63. GRANITITE.—Common ternary; fine-grained base, containing much oligoclase, rendered porphyritic by patches of black mica and larger crystals and grains of flesh-coloured orthoclase and smoky quartz.—*Grampians.*

1.64. GNEISS-GRANITE.—Common ternary; medium-grained; very micaceous, the peculiar mode of distribution of the mica imparting to it a gneissose texture.—*Bucknall's Station, near Carisbrook.*

1.65. GNEISS-GRANITE.—Common ternary; fine-grained;

very micaceous; the peculiar mode of distribution of the mica producing a gneissose texture. Part of the specimen in which this texture is absent, is rendered porphyritic by larger crystals of orthoclase, and contains some oligoclase.—*Bendigo.*

1.66. TIN-GRANITE.—Common ternary, but very poor in mica; coarse-grained; contains cassiterite (tin-ore) and copper and arsenical pyrites finely impregnated.—*Gimblet's Tin locality, Beechworth.*

1.67. TIN-GRANITE.—Common ternary; fine-grained; very poor in mica and rich in oligoclase; contains small grains and crystals of cassiterite (tin-ore) and arsenical and copper pyrites disseminated through the mass, and is irregularly traversed by thin quartzose veins full of the same minerals.—*Gimblet's Tin locality, Beechworth.*

1.68. TIN-GRANITE.—Common ternary; rich in silvery-white mica; medium-grained; contains grains of cassiterite scattered through the mass; rather friable on account of partial decomposition of the feldspar.—*Hensley's Tin-lode, Beechworth.*

1.69. GRANITE.—Common ternary; coarse-grained; contains flesh-coloured orthoclase, smoky quartz, and a little black mica; seems to be of a friable nature.—*Dergholm.*

1.70. GRANITE.—Common ternary; medium-grained; straw-coloured feldspar; contains both black and white mica.—*Granya.*

1.71. GRANITE.—Common ternary; rather coarse-grained; some of the feldspar is oligoclase; both black and white mica are present.—*Harrow.*

1.72. GARNET-GRANITE.—Common ternary; rather coarse-grained, with an indistinct banded structure, due to the arrangement of the feldspar and mica, the latter greatly predominating; contains small garnets.—*Shore of Corner Inlet, near Yanakie Station.*

1.73. GRANITE.—Common ternary; coarse-grained; the feldspar, some of which is oligoclase, occurs in rather large patches.—*Near Egerton.*

1.74. GRANITE.—Similar to No. 1.73.—*Beechworth.*

1.75. GRANITE.—Common ternary; coarse-grained and feldspathic, with black and white mica.—*Beechworth.*

1.76. GRANITE.—Common ternary; compact medium-grained and rather poor in mica; dark and light flesh-coloured orthoclase.—*Arthur's Seat, Mornington.*

1.77. GRANITE.—Common ternary; shows alternate bands of coarse and fine-grained texture.—*Lock's claim, Sandy Creek, Maldon.*

1.78. GRANITE.—Common ternary; rather fine-grained; partially decomposed.—*Foster.*

1.79. DECOMPOSED GRANITE.—*Foundation of the Royal Hotel, St. Kilda.*

1.80. GARNET-GRANITE.—Common ternary; feldspathic and rather poor in mica and quartz; plagioclase plentiful; pale coloured garnets occur through the mass.—*Bethanga.*

1.81. GRANITE.—Common ternary; very irregular structure; the orthoclase occurs in crystals and lenticular patches; much mixed with the country rock.—*From a dyke, Manton's Gully, Maldon.*

1.82. GRANITE.—Common ternary; very coarse-grained; orthoclase partly decomposed, white mica and quartz; shows a few crystals of tourmaline.—*Beechworth.*

1.83. GRANITE.—Common ternary; in part micaceous; feldspar affected by decomposition.—*Yackandandah.*

1.84. GRANITE.—Common ternary; very feldspathic and poor in mica.—*From a dyke in the Eaglehawk Union Coy.'s Mine, Maldon.*

1.85. GRANITE.—Common ternary; rather decomposed.—*Table Top Range, Beechworth.*

1.86. GREISEN.—Binary; composed of granular quartz with patches of white and greenish-grey mica; contains scattered grains of tin-ore. (See introductory remarks under Granite.)—*Neighbourhood of Hensley's Tin-lode, Beechworth.*

1.87. HALF-GRANITE (Aplite).—Binary; quartz and orthoclase; coarsely porphyritic. The orthoclase crystals are twins of the Baveno type.—*Beechworth.*

1.88. GRAPHIC-GRANITE (Pegmatite).—Binary; quartz and orthoclase, the quartz occurs in undulating layers through the orthoclase.—*Beechworth.*

1.89. GRAPHIC-GRANITE (Pegmatite).—Binary; consists of a rather fine-grained portion of orthoclase and quartz, the remainder being coarse-grained and containing crystals of tourmaline and plates of white mica.—*Mosquito Reef, Maldon.*

1.90. GRAPHIC-GRANITE (Pegmatite).—Binary; quartz and orthoclase. The orthoclase occurs as crystals, which are finely impregnated with quartz in such a manner as to closely resemble Hebrew characters. Part of the quartz also occurs as crystals, although evidently of secondary origin, as is also a micaceous mineral—probably pholerite—which is present.—*Phillip Island.*

1.91. GRAPHIC GRANITE (Pegmatite).—Binary; quartz and orthoclase. The orthoclase has the appearance of being penetrated by long crystals of quartz in a most regular manner, which gives it a columnar structure on the weathered portion. It also contains a little white mica.—*Beechworth.*

1.92. HALF-GRANITE (Aplite).—Binary; quartz and orthoclase; coarsely porphyritic. The orthoclase crystals are twins of the Baveno type.—*From a dyke in common ternary granite near Bradford. Geological ¼ sheet* 14 *N. W.*

1.93. HALF-GRANITE (Aplite).—Binary; quartz and orthoclase, coarsely porphyritic. The orthoclase crystals, though rather imperfect, appear, like in No. 1.92, to be twins of the Baveno type.—*Station Peak, near Geelong. Geological ¼ sheet* 20 *S. W.*

1.94. HALF-GRANITE (Aplite).—Binary; quartz and orthoclase, the former greatly predominating, the latter more or less decomposed. The peculiar layer-like mode of distribution of the feldspar produces a rather imperfectly laminated structure. —*Back track to Wooragee, Beechworth.*

1.95. HALF-GRANITE (Aplite).—Binary. This specimen consists of a porphyritic portion—a white fine granular feldspathic base enclosing quartz grains—which graduates into a dense intimate mixture of much quartz and some feldspar, conforming to felsite, or so-called "halleflinta."—*Breakneck track, Reid's Creek, Beechworth.*

1.96. HALF-GRANITE (Aplite).—Binary; medium-grained; an even mixture of quartz and white orthoclase, rendered porphyritic by larger grains and crystals of orthoclase of a light flesh colour.—*From a dyke in common ternary granite, Mount Alexander.*

1.97. HALF-GRANITE (Aplite). —Binary; quartz and orthoclase, with a few scattered scales of mica; the feldspar slightly affected by decomposition.—*Mount Beckworth.*

1.98. HALF-GRANITE (Aplite).—Binary; quartz and orthoclase, the latter slightly predominating; rather fine-grained.—*Mount Beckworth.*

1.99. HALF-GRANITE (Aplite). — Binary; fine-granular rather feldspathic base, composed of quartz and orthoclase, rendered porphyritic by small patches of quartz and a few scales of mica.—*Mount Beckworth.*

1.100. HALF-GRANITE (Aplite).—Binary; quartz and orthoclase, with a few scales of mica; rather fine-grained.—*Mount Beckworth.*

1.101. HALF-GRANITE (Aplite).—Binary; very fine-grained uniform mixture of quartz and feldspar, the latter rather predominating; approaches felsite in appearance.—*Riddell's Creek, near Mount Macedon.*

1.102. HALF-GRANITE (Aplite).—Binary; fine-grained mixture of quartz and orthoclase with larger patches of both minerals interspersed.—*Loddon River.*

1.103. HALF-GRANITE (Aplite).—Binary; very fine-grained mixture of quartz and orthoclase.—*From the "Hanging Rock" dyke, near Heathcote.* (Geological Note by Mr. Norman Taylor.—This dyke, which lies to the westward of the Heathcote township, is in places of an ordinary granite character; in others it passes into eurite. The most prevailing colour is of a light-brown passing into light-green. In width it varies from two to five chains, and is traceable for four miles south of the Kyneton road-cutting, where it appears to pass into a thin granite dyke, accompanied by greenstone. It is extensively used in Heathcote both for building and kerbing, the harder varieties being well adapted for these purposes. It has also been used for making filters, or "drip-stones." The dyke has, probably, some connection with one occurring in the area of Geological ¼ sheet 51 S.W.—*Baynton.*)

1.104. HALF-GRANITE (Aplite).—Binary; fine-grained mixture of quartz and principally orthoclase.—*Sutton Grange, near Mount Alexander. Geological ¼ sheet* 15 *N. W.*

1.105. HALF-GRANITE (Aplite).—Binary; very fine-grained mixture of quartz and orthoclase.—*Dyke under Mount Ida Hotel, Heathcote.*

1.106. HALF-GRANITE (Aplite).—Binary; much decomposed feldspar and greenish mica.—*Pyrenees.*

1.107. HALF-GRANITE (Aplite).—Binary; quite decomposed feldspar and quartz; medium-grained.—*Pennyweight Flat, Beechworth.*

1.108. EPIDOTE-GRANITE.—Ternary; flesh-coloured orthoclase, green "epidote" (pistacite), and some quartz; medium-grained.—*Head of Nuggety Gully, near Talbot.*

1.109. TOURMALINE-GRANITE.—Quaternary; a crystalline, fine-granular mixture of white feldspar, quartz, white mica, and black tourmaline (schorl), with a few grains of brown garnet; some of the feldspar is triclinic (albite?); structure of the rock apparently tabular. Resembles No. 1.49, but contains more tourmaline.—*Bendigo District.*

1.110. SYENITE-GRANITE.—Ternary; consists of flesh-coloured orthoclase, hornblende, and quartz; medium-grained. A fine ornamental building stone, but expensive to work. Used in the General Post Office, the Australasian Insurance Company's offices, for gravestones, etc.—*Gabo Island.*

1.111. SYENITE-GRANITE.—Ternary; medium-grained;

composed of flesh-coloured orthoclase, some greenish-white oligoclase, hornblende, and quartz. Would form a fine ornamental building stone, though, like No. 1.110, expensive to work.—*Gippsland.*

1.112. SYENITE-GRANITE.—Ternary; fine-grained; composed of feldspar, quartz, and hornblende; some of the feldspar appears to be oligoclase.—*From a dyke in Van der Luft's paddock, near Heathcote.*

1.113. SYENITE-GRANITE.—Ternary; a fine-grained base, composed of feldspar, quartz, and hornblende, rendered porphyritic by irregular-sized patches and crystals of feldspar.—*From a dyke in south-west corner of Geological ¼ sheet* 51 *S.W. Baynton.*

1.114. SYENITE-GRANITE.—Quaternary; brecciated-looking mixture of portions of common ternary, coarse and fine-grained granite, rendered porphyritic by crystals of black hornblende; a considerable percentage of the feldspar showing a light-greenish colour is oligoclase.—*Mount Kingower.*

1.115. SYENITE-GRANITE. — Quaternary; medium-grained, common ternary granite with abundance of oligoclase, rendered porphyritic by rather large crystals of black hornblende.—*Mount Kingower.*

1.116. SYENITE-GRANITE. — Quaternary; medium-grained common ternary granite base, rendered porphyritic by crystals of black hornblende, and coloured brownish-red by hydrous oxide of iron; part of the feldspar appears to be oligoclase.—*Mount Beckworth.*

1.117. SYENITE-GRANITE.—Quaternary; fine-grained common ternary granite base, rendered porphyritic by crystals of black hornblende and of both orthoclase and oligoclase.—*Bendigo.*

1.118. SYENITE-GRANITE.—Quaternary; medium-grained; consists of white feldspar, black mica, hornblende and quartz. —*Dandenong.*

1.119. SYENITE-GRANITE.—Quaternary; rather fine-grained mixture of feldspar, black mica, hornblende and quartz; some of the feldspar is apparently oligoclase.—*Narree Warren.*

1.120. DECOMPOSED GRANITE (Kaolin Rock).—Feldspar entirely decomposed to kaolinite, through which quartz grains are sparingly distributed; mica completely removed; valuable for china manufacture.—*Deep Creek, near Bulla. Geological ¼ sheet* 7 *S.E.*

1.121. DECOMPOSED GRANITE (Kaolin Rock).—Same as No. 1.120.—*Mount Kingower.*

1.122. GRANITE PORPHYRY.—Extremely fine-grained binary base, composed of feldspar and quartz, full of crystals of orthoclase and quartz; those of the latter representing mostly the double hexagonal pyramid, with no, or but occasional very small, planes of the hexagonal prism.—*Back Creek, east of Spring Plains. Geological ¼ sheet* 51 *S. W.*

1.123. GRANITE PORPHYRY.—Very fine-grained, common ternary granite base, showing imperfect crystals and patches of quartz, and accumulations of scales of greyish-green mica; encloses also pseudomorphs of brown iron ore after iron pyrites.—*M'Intyre Diggings.*

1.124. GRANITE PORPHYRY.—Common ternary, very fine-grained granite base, poor in mica, with larger and smaller crystals of orthoclase, oligoclase, and dark-coloured quartz.—*One-tree Hill, Beechworth.*

1.125. GRANITE PORPHYRY.—Common ternary, very fine-grained granite base, with crystals of quartz, orthoclase, and mica, the latter rather prominent.—*Brewery Springs, near Maldon.*

1.126. GRANITE PORPHYRY.—Extremely fine-grained, nearly dense, binary granite base, composed of feldspar and quartz, enclosing crystals of orthoclase and small granular black patches, consisting of scales of black mica.—*North-east of Baynton. Geological ¼ sheet* 51 *S. W.*

1.127. SYENITE-GRANITE PORPHYRY.—Fine-grained, common ternary granite base, enclosing crystals of hornblende and large crystals of orthoclase.—*West of Lancefield-road, south of parish of Baynton. Geological ¼ sheet* 5 *N. W.*

1.128. SYENITE-GRANITE PORPHYRY.—Very fine-grained, quaternary, rather quartzose, granite base (quartz, mica, hornblende, and orthoclase), with large crystals of hornblende and feldspar; the latter consisting of both orthoclase and oligoclase.—*Mount Kingower.*

1.129. SYENITE-GRANITE PORPHYRY.—Fine-grained, quaternary granite base (feldspar, quartz, mica, and hornblende), enclosing large crystals of hornblende, mica, and feldspar; some of which latter appears to be oligoclase.—*Heathcote.*

1.130. SYENITE-GRANITE PORPHYRY.—Fine-grained syenite-granite base (orthoclase, quartz, and hornblende), with larger crystals of feldspar and hornblende.—*From a dyke at south-west corner of Geological ¼ sheet* 51 *S. W.*

FELSITE—FELSITE PORPHYRY.

Of this species the collection contains a number of fine characteristic specimens, representing most of the known varieties. Some of these varieties are called by various names, which have been noted both on the descriptive labels and in the sequel.

2.1. FELSITE (Feldstone, Elvanite).—Dense siliceo-feldspathic rock.—*From between Violet Town and Seymour.*

2.2. FELSITE (Feldstone, Elvanite.)—Dense siliceo-feldspathic rock, similar to 2.1.—*From a hill 12 miles north of Bendigo.*

2.3. FELSITE (Feldstone, Elvanite).—Same as No. 2.2.

2.4. FELSITE (Feldstone, Elvanite).—Extremely fine-grained, nearly dense rock, with imperfect slaty cleavage, consisting of an intimate mixture of quartz and feldspar, of which the former greatly predominates. The black markings appear to be of a dendritic character, caused by oxide of manganese.—*From a dyke running along Swiper's Reef, Maldon.*

2.5. FELSITE (Feldstone, Elvanite).—Siliceo-feldspathic rock; rather porous. Similar to 2.1 and 2.2.—*Heathcote.*

2.6. FELSITE.—A light greenish-coloured felsitic rock, traversed and rendered breccia-like by innumerable veins and nests of quartz.—*From a dyke in granite, Spring Creek, Beechworth.*

2.7. FELSITE (Feldstone, Elvanite).—Dense, felsitic base, containing spherules of a radiated concentric structure.—*Buchan, Gippsland.*

2.8. FELSITE (Feldstone, Elvanite).—Dense, felsitic rock, showing an indistinct laminated appearance, and containing finely disseminated grains of pyrrhotite.—*Marysville.*

2.9. FELSITE (Feldstone, Elvanite).—Dense, dark grey, laminated rock, with a tendency to cleave along the planes of lamination. The fractured portion has a mottled appearance, due to a dark coating on the contact planes of the laminae.—*Lilydale.*

2.10. FELSITE PORPHYRY (Feldstone Porphyry, Eurite Porphyry, Elvanite.)—Yellowish-white felsitic base, enclosing rather small crystals of quartz (mostly perfect double hexagonal pyramids) and orthoclase.—*Bank of the Yarra River, between Prince's Bridge and the Botanical Gardens. Geological ¼ sheet 1 S.E.*

2.11. FELSITE PORPHYRY (Feldstone Porphyry, Elvanite).—Yellowish-white, rather dull felsitic base, with crystals of orthoclase, hornblende, patches of greenish-white mica, and occasional grains of quartz.—*Gippsland.*

2.12. **Felsite Porphyry** (Eurite Porphyry, Quartz Porphyry, Elvanite).—Dense, white, apparently pure feldspar base, enclosing grains and crystals of quartz. This rock has some resemblance to the species "granulite" or "leptynite."—*Dunolly.*

2.13. **Felsite Porphyry** (Feldstone Porphyry, Quartz Porphyry, Elvanite).—Whitish, rather dull felsitic base, with grains and crystals of quartz; appears to be indistinctly laminated; the black spots are apparently, as on No. 2.4, of a dendritic character.—*Kingower.*

2.14. **Felsite Porphyry** (Feldstone Porphyry).—Bluish-grey, very fine-granular, siliceo-feldspathic base, with rather scattered crystals of orthoclase and quartz.—*Loddon River, near Maldon.*

2.15. **Felsite Porphyry** (Hornstone Porphyry).—Dense, brown, hornstone-like base, thickly impregnated with crystals of orthoclase and grains of quartz; a few scattered mica scales and grains of almandine garnet are also observable in places.—*Kingower.*

2.16. **Felsite Porphyry** (Hornstone Porphyry).—Dense, brown base, with rather small crystals of reddish orthoclase and grains and crystals of dark-coloured quartz.—*From between Heathcote and Bendigo.*

2.17. **Felsite Porphyry** (Hornstone Porphyry).—Dense, greenish-grey, hornstone-like base, enclosing crystals of flesh-coloured orthoclase and grains of quartz.—*Upper Wannon Falls.*

2.18. **Felsite Porphyry** (Hornstone Porphyry).—Base greyish-black; otherwise same as 2.17.—*Upper Wannon Falls.*

2.19. **Felsite Porphyry.**—Very fine-granular, greyish-black base, with crystals of feldspar, some of which appear to be triclinic.—*West of Mount Disappointment, Upper Plenty River, Geological ¼ sheet 3 N.E.*

2.20. **Felsite Porphyry** (Hornstone Porphyry).—Dense, black, hornstone-like, brecciated-looking base, enclosing grains of quartz, and, in less quantity, small crystals of flesh-coloured orthoclase.—*Dandenong Ranges.*

2.21. **Felsite Porphyry.**—Dense, yellowish-grey base, thickly impregnated with crystals of orthoclase and grains of quartz; slightly affected by decomposition around the margin.—*Bendigo.*

2.22. **Felsite Porphyry** (Feldstone Porphyry, Quartz Porphyry, Elvanite).—Very fine-granular, siliceo-feldspathic base, with crystals of quartz (frequently perfect double hexagonal pyramids), and a few scattered crystals of feldspar.—*McIntyre.*

2.23. Felsite Porphyry (Feldstone Porphyry, Elvanite).—Greenish-white, siliceo-feldspathic base, with crystals of feldspar and grains of quartz; the former affected by decomposition.—*From between Violet Town and Seymour.*

2.24. Felsite Porphyry (Feldstone Porphyry, Elvanite).—The same as 2.23.

2.25. Felsite Porphyry (Feldstone Porphyry, Elvanite).—Dull yellowish-white, siliceo-feldspathic base, with scattered scales of greenish-white mica, thin needles of hornblende, and a few quartz grains; affected by decomposition round the margin.—*Loddon River.*

2.26. Felsite Porphyry (Elvanite).—Very fine granular, siliceo-feldspathic base, full of grains and crystals of quartz, orthoclase, and hornblende.—*From between Violet Town and Seymour.*

2.27. Felsite Porphyry (Quartz Porphyry, Elvanite).—Felsitic base, enclosing crystals and grains of quartz, and also fragments of slate.—*Fernshaw.*

2.28. Felsite Porphyry (Hornstone Porphyry).—A dense, hornstone-like base, containing abundant crystals of red orthoclase, and crystals and grains of dark coloured quartz.—*Grange Creek (Muddy Creek Miocene Beds).*

2.29. Felsite Porphyry (Quartz Porphyry, Elvanite).—Dense, white, pure felsitic base, enclosing crystals and grains of quartz, and some mica.—*Near Seymour.*

2.30. Felsite Porphyry (Feldstone Porphyry).—Greenish, felsitic base, of a somewhat brecciated appearance, enclosing grains of quartz, and crystals of decomposed feldspar.—*Bil Bil Wyt, Parish of Balmoral, between Victoria and Dundas Ranges.*

2.31. Felsite Porphyry (Feldstone Porphyry).—Dense, felsitic rock, containing a few grains and crystals of quartz, and a number of small crystals of feldspar partly decomposed.—*Below Murrindale.*

2.32. Felsite Porphyry (Feldstone Porphyry).—Dense, felsitic base, with a few grains of quartz, and crystals of feldspar. The mass of the rock is impregnated with crystals of pyrites, some of which have evidently been removed, leaving small cubical cavities.—*Band and Albion Consols Mine, Ballarat.*

2.33. Felsite Porphyry (Quartz Porphyry, Elvanite).—A granular mixture of feldspar and quartz, of a light-greenish colour, and containing pebbles of slate and quartz.—*From a dyke at Queenstown, Caledonia Diggings.*

2.34. Felsite Porphyry (Hornstone Porphyry).—Dense, felsitic, hornstone-like base, enclosing crystals and grains of quartz, and also fragments of slate.—*Murrindal West, Snowy River, Gippsland.*

2.35. Decomposed Felsite Porphyry (Claystone Porphyry).—*Gippsland.*

2.36. Decomposed Felsite Porphyry (Claystone Porphyry).—*John Bull Reef, near Berlin.*

2.37. Decomposed Felsite Porphyry (Claystone Porphyry).—Showing dendritic markings due to oxide of manganese.—*Brit Brit, near Coleraine.*

2.38. Felsite Porphyry (Felsstone Porphyry).—Felsitic rock of a rather granular appearance, stained owing to decomposition.—*Northern boundary of Mulgrave.*

2.39. Felsite Porphyry (Felsstone Porphyry).—Similar in structure to No. 2.38, but of a greenish-colour owing to absence of decomposition.—*Northern boundary of Mulgrave.*

2.40. Felsite Porphyry (Quartz Porphyry, Elvanite).—Dense, almost white, felsitic base, with crystals and grains of quartz.—*Bendigo.*

2.41. Felsite Porphyry (Quartz Porphyry, Elvanite).—Very dense, greyish-white, felsitic rock, containing grains of quartz.—*Near Tambo, 40 miles from Omeo, and 21 miles from Bruthen, Gippsland.*

b. QUARTZLESS ORTHOCLASE ROCKS.

Rocks of this class, in which quartz does not form an essential component though it may occasionally occur as an accessory, are apparently very rare in Victoria, and the collection contains only a few specimens, representing the species "syenite" and "syenite porphyry" (quartzless orthoclase porphyry).

3.1. Syenite.—Medium-grained mixture of flesh-coloured orthoclase and greenish-black hornblende, with scattered particles of chlorite and a few quartz grains.—*Head of Nuggety Gully, Talbot.*

3.2. Syenite.—Fine-grained mixture of much flesh-coloured orthoclase, little hornblende, epidote, and a few scales of mica and grains of quartz. Traversed by seams of dense green epidote (pistacite).—*Omeo Road, Gippsland.*

3.3. Syenite.—Similar to No. 3.1.—*Four miles S.E. of Talbot.*

3.4. Syenite.—Similar to Nos. 3.1 and 3.3, only the feldspar is white instead of flesh-coloured.—*Four miles S.E. of Talbot.*

3.5. SYENITE PORPHYRY.—Fine-grained, syenitic base, with crystals of orthoclase and hornblende, and grains of quartz. The orthoclase is slightly affected by decomposition.—*Dyke traversing lower silurian rocks. Branch of Nuggety Gully, S.E. from Talbot.*

3.6. SYENITE PORPHYRY.—Similar to No. 3.5.

3.7. SYENITE PORPHYRY (Quartzless Orthoclase Porphyry).—Fine-granular, syenitic base (apparently composed of hornblende and feldspar), with crystals of very glassy-looking orthoclase.—*Brock's Monument, north-east of Mount Macedon. Geological ¼ sheet* 6 *N. W.*

2.—ROCKS IN WHICH THE PREDOMINATING FELDSPAR IS TRICLINIC (PLAGIOCLASE).

a. OLIGOCLASE ROCKS.

DIORITE AND ALLIED ROCKS.

The rocks of this class, essentially compounds of oligoclase and hornblende, but occasionally associated with quartz and mica, are also known under the general term "greenstone"—"hornblendic greenstone" in contradistinction to the "augitic greenstone," "Diabase." They occur in our colony mostly as dykes, varying from a few to several hundred feet in thickness, traversing upper silurian rocks, and are represented in the collection in nearly all the varieties of texture and mineral composition mentioned in text-books. These dykes are, as mining features, of special interest and importance, because they have mostly been found impregnated with auriferous pyrites, and traversed by or associated (either on the hanging or foot-walls, or on both walls), with auriferous quartz veins, partly regular, partly quite irregular, in course, extent and richness. In fact, it may be affirmed that by far the greater quantity of the quartz-gold produced by the goldfields of the upper silurian rocks, is derived from such diorite dykes. As some of the dykes celebrated in this respect may be mentioned, the large dyke of the Morning Star Hill, Wood's Point; that of the Loch Fyne Company, near Matlock; at Gaffney's Creek those of the Eldorado and Wallaby companies; and a very important one which has been opened for four or five miles in length, and has been for years successfully worked by the Rose of Denmark Company at its northern, and by the Castle Reef and A1 companies at its southern end, with numerous rich intermediate claims. In Gippsland we have rich dykes at Donnelly's Creek; and at Walhalla, besides that of the Longfellow's Company, the dyke of the celebrated Cohen's Reef, perhaps the richest one in the colony. Some of the specimens from it, shown in the collection, represent the variety "diorite aphanite," and can hardly be distinguished from those derived from the dyke of the Rose of Denmark Company, Gaffney's Creek. At Crossover Creek, North Gippsland, the dyke of the Albion Company is interesting, on account of its highly micaceous character, and the clear evidence it affords of the favourable influence of the dyke upon the gold-bearing character of the reefs traversing it at right angles to its strike. For whilst these reefs are but very poorly auriferous in the upper silurian slate, into which they continue on either side, they become even richly gold-bearing throughout the width of the dyke (about 90 feet). Another place where a great number of diorite dykes occur, most of which have proved auriferous, is Alexandra; but they are very much decomposed, a feature shown by most dykes, in a stronger or less degree, to varying, and sometimes considerable depths. With regard to the question whether the strike or direction and angle of dip of dykes; the texture or mode of composition of the rock—*i.e.*, whether coarse or fine-grained, or whether feldspar or hornblende predominates—have any bearing upon the auriferous character of the traversing or associated quartz veins, no conclusive observations have as yet been made. Judging from a number of well-known dykes, it seems, however, as if neither of these features has any influence in this respect. Whilst, for instance, the dyke of Cohen's Reef, Walhalla, and the extensive one at Gaffney's Creek, above noticed, are for the greater part of an aphanitic, highly feldspathic character, the equally rich dykes of the Morning Star Hill, Loch Fyne, Eldorado, Wallaby, etc., are coarse-granular and highly hornblendic, and their strikes and dips are also different. There is another feature in connection with some of these dykes, which deserves special notice, namely, that they show in strike and dip great changes both in texture and composition. For instance, the extensive dyke of Gaffney's Creek, and, in a less degree, the dyke of Cohen's Reef, are in some parts distinctly crystalline-granular, *i.e.*, show a granitic texture with triclinic feldspar and hornblende plainly perceptible, whilst for the greater part opened they are micro-crystalline-granular, apparently quite dense, light greenish-grey—feldstone-like—with neither hornblende nor feldspar recognisable. In fact, if it were not for the occasional changes in texture and composition just mentioned, the rock would probably be taken for a true feldstone rather than a variety of diorite, *i.e.*, feldspathic diorite-aphanite. A fine illustration of both a textural and mineralogical change combined is shown in the dyke on which the Thomson River copper mine has been opened. The copper-ore-bearing part is here a coarse-granular, highly hornblendic diorite—in fact, nearly pure hornblende rock in places—which forms "shoot-like," the northern termination of the dyke, whilst southward in strike it changes within a very short distance, through fine-granular to a nearly dense, highly feldspathic aphanite, closely resembling the rock of the Cohen's Reef and Gaffney's Creek dykes, just spoken of.

4.1. DIORITE.—Granular mixture of hornblende and oligoclase, with scattered quartz grains.—*Near south-east corner of section* 15, *parish of Metcalfe. Geological* ¼ *sheet* 13 *S.E.*

4.2. DIORITE.—Rather coarse-granular and hornblendic.—*Eastern side of right-hand branch of Stringer's Creek, Walhalla.*

4.3. DIORITE.—Coarse-granular and highly hornblendic; forms the northern termination of a strong dyke, and represents the "lodestone" of the Thomson River copper mine, being in parts densely impregnated with copper and iron-pyrites, and traversed by irregular larger and smaller veins of these ores, intimately mixed. Southward in strike it changes to a dense, feldspathic aphanite (*see* No. 4.19).—*Thomson River copper mine, near Walhalla, North Gippsland.*

4.4. DIORITE. — Crystalline - granular, medium - grained ; strongly impregnated with iron pyrites.—*Dyke of the Eureka mine, about three-quarters of a mile east of Walhalla, North Gippsland.*

4.5. DIORITE.—Fine-granular; contains scattered specks of iron pyrites.—*Loddon River.*

4.6. DIORITE.—Fine-granular and even-grained.—*Loddon River.*

4.7. DIORITE.—Fine-granular and slightly porous; affected by decomposition.—*Loddon River.*

4.8. DIORITE.—Fine-granular, highly feldspathic, much decomposed; traversed by a small quartz vein, and slightly impregnated with crystals of iron pyrites.—*From a dyke traversed with auriferous quartz veins, South Longfellow's Company's ground, near Walhalla, North Gippsland.*

4.9. DIORITE.—Fine-granular; strongly affected by decomposition; full of patches and irregular veins of partly crystallised iron pyrites.—*From the gold-bearing dyke of Hunt's Claim, Gaffney's Creek.*

4.10. DIORITE.—Granular; medium-grained; strongly affected by decomposition.—*From the goldbearing dyke, the so-called "Cohen's Reef," Walhalla, North Gippsland.*

4.11. DIORITE.—Fine-granular; feldspathic; somewhat affected by decomposition; contains some crystals of hornblende and patches of iron pyrites, bearing gold and nickel.—*Gaffney's Creek, Gippsland.*

4.12. MICA-DIORITE.—A rather coarse-granular rock, with a greenish, somewhat decomposed-looking base, in which hexagonal plates of dark mica are thickly studded.—*Union Company's Mine, Diamond Creek.*

4.13. MICA-DIORITE.—A rather coarse-granular mixture of somewhat gneissose texture of oligoclase, mica, and quartz; conforms in composition to the rock described as "kersantite," occurring in the Vosges mountains, France.—*Van der Luft's paddock, near Heathcote.*

4.14. MICA-DIORITE (Mica-Porphyrite).—Fine-granular, feldspathic, apparently chloritic and somewhat decomposed diorite base, rendered porphyritic by hexagonal plates of brownish-black mica and a few crystals of feldspar and hornblende; strongly impregnated with grains of copper and iron pyrites; conforms to the rock described as "kersanton," occurring in Brittany, France.—*From a dyke traversed by highly auriferous quartz veins at Crossover Creek, North Gippsland.*

4.15. DIORITE-APHANITE.—An extremely fine-grained, apparently dense diorite, rendered micro-porphyritic by very slender prismatic crystals of hornblende.—*Den Hills, near Montham.*

4.16. DIORITE-APHANITE.—Apparently dense homogeneous base, rendered slightly porphyritic by crystals of triclinic feldspar (oligoclase); contains scattered specks of copper pyrites.—*Dyke under Mount Ida Hotel, Heathcote.*

4.17. DIORITE-APHANITE.—Microcrystalline-granular; quite dense and compact-looking; highly feldspathic; encloses crystals of iron pyrites, and shows on one side a crystalline coating of bitterspar, in which is embedded a small speck of gold.—*From the auriferous dyke of the A 1 Company, Castle Reef, Raspberry Creek.*

4.18. DIORITE-APHANITE.—Microcrystalline-granular; quite dense and compact-looking; highly feldspathic; traversed by veins of auriferous quartz and arsenical pyrites, and strongly impregnated with crystals of iron pyrites and slender prismatic crystals of arsenical pyrites.—*From the auriferous dyke, the so-called "Cohen's Reef," Walhalla Company's mine, Walhalla.*

4.19. DIORITE-APHANITE.—Microcrystalline-granular; apparently dense, felsite-like; highly feldspathic, and rather calcareous; traversed by quartz veins.—*Forms the modification southward in strike of the hornblendic, cupriferous, diorite dyke of the Thomson River copper mine, Walhalla (see No.* 4.3).

4.20. DIORITE PORPHYRY (Aphanite Porphyry).—Microcrystalline-granular; aphanitic diorite base, densely charged with small crystals of white triclinic feldspar (oligoclase?); a few scattered needles of black hornblende are also observable.—"*Hanging Rock" dyke, near Heathcote. Geological ¼ sheet* 51 *N.W.*

4.21. DIORITE PORPHYRY (Aphanite Porphyry).—Dense greenish-black aphanite base, with crystals of whitish oligoclase, and scattered, small patches of very fine-scaly mica.—*North-east of Baynton, county of Dalhousie.*

4.22. DIORITE PORPHYRY.—Finely crystalline-granular, greyish diorite base, with crystals of white oligoclase and black hornblende.—*Dyke two miles north of the Green Hill, near Malmsbury.*

4.23. DIORITE PORPHYRY (Aphanite Porphyry).—Dense, greenish-black aphanite base, with crystals of triclinic feldspar and grains of quartz.—*Loddon River.*

4.24. DIORITE PORPHYRY.—Finely granular, micaceous diorite base, with crystals of triclinic feldspar and hornblende; strongly affected by decomposition.—*Intrusive patch near Tarilta. Geological ¼ sheet* 15 *N.E.*—Geological Note.—This specimen comes from a peculiar intrusive mass of rock, several acres in extent, that, in most places where exposed, consists of diorite (pinkish triclinic feldspar and black hornblende), but assumes at others granitic, syenitic, porphyritic, and brecciated characters. Thus at its junction with the black graptolite slates of the neighbourhood, where several small faults have been traced (*see* sketch on geological ¼ sheet 15 N.E.), the rock bears the character of a porphyry, more or less decomposed (specimen 4.24); whilst at another place, scarcely four chains off, the accession of black mica and some quartz renders the rather decomposed rock undistinguishable from decomposing granite; and from one of the small shafts sunk for the purpose of examination, specimens of "epidosite" (*see* specimen 10.1) were also obtained. In small cavities of the porphyritic variety, crystals of "albite," associated with abnormally formed quartz crystals, occur, and it was therefore probable that the feldspar entering into the composition of the rock might also be "albite," though the absence of the characteristic twin-striation on its cleavage planes gives it all the appearance of "orthoclase." The following are the results of an analysis by Mr. J. Cosmo Newbery, viz.:—Silica, 67·70; alumina, 20·50; sesquioxide of iron, traces; lime, traces; magnesia, traces; potassa, traces; soda, 10·00—proves it, however, clearly to be "albite," and the rock is therefore a diorite according to recent views on petrographical classification. The adjoining fossiliferous strata are not, or but very slightly, altered, and hand-specimens can easily be obtained, of which one half (of a specimen) consists of black slate, with well-preserved graptolites, and the other of the porphyritic variety of the intrusive rock. The brecciated variety, apparently a mixture of chips of silurian rock and of the dioritic paste, occurs only here and there along the boundary of the two formations.

4.25. DIORITE PORPHYRY.—Crystalline-granular base, with numerous long crystals of hornblende, rendering it porphyritic; contains patches of pink feldspar, and is finely impregnated with pyrites.—*Gippsland.*

PORPHYRITE AND ALLIED ROCKS.

5.1. MICA-PORPHYRITE. — Microcrystalline-granular, dark feldspathic base, with crystals of triclinic feldspar, abundant hexagonal plates of dark bronze-brown mica, and a few scattered quartz grains.—*From the Black Spur, near Fernshaw.*

5.2. MICA-PORPHYRITE.—Same as No. 5.1.

5.3. MICA-PORPHYRITE.—Similar to No. 5.1.—*Marysville.*

5.4. MICA-PORPHYRITE.—Similar to No. 5.1, only rather finer-grained.—*Found enclosed in the older basalt.—Wandin Yalloak.*

5.5. MICA-PORPHYRITE.—Same as No. 5.1, only feldspathic base of lighter colour.—*From the Black Spur near Fernshaw.*

5.6. FELDSPAR-PORPHYRITE. — Microcrystalline-granular, dark-green, probably chloritic feldspar base, with crystals of triclinic feldspar, grains of quartz, and small, greenish-black, scaly patches of probably a "hydromica."—*Black Spur, near Fernshaw.*

5.7. FELDSPAR-PORPHYRITE.—Very finely-crystalline-granular base, enclosing larger and smaller grains of quartz, crystals of triclinic feldspar, and small scales of black mica—those of feldspar being predominant and most striking.—*From a dyke east of Emberton. Geological ¼ sheet* 13 *S.E.*

5.8. FELDSPAR-PORPHYRITE.—Same as No. 5.7, but mica very scarce.—*Dyke east of Emberton. Geological ¼ sheet 13 S.E.*

5.9. FELDSPAR-PORPHYRITE.—Very fine crystalline-granular, black base, in which crystals of triclinic feldspar are porphyritically developed.—*Marysville.*

b. LABRADORITE ROCKS.

Rocks of this class include diabase and allied rocks, gabbro, etc. Diabase may be regarded typically as a crystalline-granular admixture of triclinic feldspar (labradorite or oligoclase) and augite, usually with more or less magnetite and titaniferous iron. They sometimes contain quartz, and are consequently divided into quartz-diabase and quartzless-diabase, or diabase proper. Gabbro consists essentially of a triclinic feldspar, generally labradorite, and diallage; sometimes however, the feldspar may be represented by saussurite, and the diallage by hypersthene, smaragdite or enstatite, constituting varieties of the gabbro family. In respect to the occurrence of these rocks in Victoria, Mr. Howitt believes that the intrusive rocks at the Murrindal, and along the tract then to the Snowy River, as well as the contemporaneous rocks at the Snowy River itself, are all varieties of diabase (mostly diabase-porphyrites), as also the similar rocks at Back Creek, and on the eastern side of the Buchan River. Mr. Howitt states* "that these diabase rocks have penetrated the felsitic Lower Buchan beds; at the Back Creek, to underlie the calcareous Upper Buchan beds, with apparently passage-beds connecting the two; and at the Snowy River, to be clearly and unmistakably in this position as regards the same formation. It seems, therefore, unavoidable to arrive at the conclusion that the diabases of the Buchan district represent volcanic rocks, which date from the period of time marked by the change of material which distinguishes the Lower from the Upper Buchan beds. In other words, they represent at places near Murrindal the 'Necks,' while at the Snowy River they represent the flows themselves." Diabase dykes occur in the Gippsland district, and under just the same conditions as dykes of the more basic diorites, the main distinction being the occurrence of augite instead of hornblende. As to whether any of them are auriferous, like many of the latter evidence is wanting, but there seems no reason why they should not be so—in fact, it is quite possible that a number of the so-called gold bearing diorite dykes may eventually prove to be diabase or some of its varieties. Near Ensay there is an interesting occurrence of diabase rocks which Mr. Howitt determined as "olivine diabase porphyrites." At Heathcote and near Lancefield they also occur; those from the former place contain much enstatite: the Lancefield diabase forms the range of which Mount William is the highest point, and was formerly considered to be diorite.

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6.1. DIABASE.—Medium-grained, and rendered slightly porphyritic by small patches of quartz and crystals of triclinic feldspar and augite; impregnated with iron and magnetic pyrites.—*East of Lancefield. Geological ¼ sheet 5 S.E.*

6.2. GABBRO, DIALLAGE ROCK.—A coarsely crystalline-granular mixture of light-green labradorite and of a dark-green augitic mineral, which, according to its lustre and cleavage, is diallage.—*Barrabool Hills, west of Geelong. Geological ¼ sheet 24 S.E.*

6.3. GABBRO, DIALLAGE ROCK.—Same as No. 6.2. On one side affected by decomposition, the feldspathic component being in places wholly removed, leaving the diallage behind as an irregular hackly surface of interwoven crystals.

Note.—This rock occurs as an extensive mass, surrounded by mesozoic carbonaceous rocks, principally sandstone; but is evidently older than the latter, the sandstones being interstratified with beds of coarse conglomerate, partly composed of rounded pebbles of the gabbro. On account of its fine colour and texture, it is well adapted for ornamental purposes, though its great hardness and toughness render it rather expensive to work. In some specimens diallage has been observed of a darker colour than the rest, and with the angle of cleavage of hornblende, which indicates an alliance to *uralite*. The following are the results of analyses of the rock by Mr. J. Cosmo Newbery:—

—	Analysis of the Rock in mass.	Soluble Portion.	Insoluble Portion.
Silica	50·84	46·34	53 94
Iron sesquioxide	0·52	1·30	...
Iron protoxide	6·99	...	11·78
Alumina	12 92	29 05	2·80
Lime	14·35	14·56	14·39
Magnesia	10 97	3·44	16·13
Soda	traces	4·51	...
Potassa	1·83		
Loss by ignition	...	1·75	...
Water	0·71	...	...
	99·13	100·95	99·04

40·06 per cent. is soluble in hydrochloric acid, and the analysis of this portion proves it to be labradorite, whilst that of the insoluble one very nearly corresponds to the mean composition of diallage.

6.4. GABBRO, DIALLAGE ROCK.—Very large-grained; nearly wholly composed of interlacing crystals of greyish and greenish diallage, showing cleavage planes of fine pearly lustre, with little, more or less decomposed triclinic feldspar (labradorite) between.—*From the Serpentine of Mount Wellington, Gippsland.*

6.5. GABBRO, DIALLAGE ROCK.—Extremely coarse-grained; consisting mostly of large crystals of diallage, some of the faces exhibiting a strong pearly lustre.—*Waratah Bay.*

B. NEWER FELDSPAR ROCKS; NEWER IGNEOUS OR VOLCANIC ROCKS.

Of the four series of rocks coming under this head—viz., the trachyte rocks, nepheline and leucite rocks, basalt rocks, and younger anorthite rocks—only the third, the basalt rocks, have as yet been observed in Victoria. As trachyte rocks exist in the neighbouring colony of New South Wales, and more extensively further north in Queensland, they may perhaps also occur in this colony in the ranges near the boundary of New South Wales; but this can only be in small outcrops or dykes; for that they exist massively developed and have been hitherto overlooked is extremely doubtful, as the country is too well explored.

BASALT ROCKS.

These rocks, which are essentially composed of *augite*, *labradorite*, and *titaniferous iron*, are extensively developed in Victoria, being estimated to occupy from 6000 to 7000 square miles of the surface. Their eruption took place during at least two distinct periods within tertiary times, and they are therefore divided into older and newer basalt rocks. The older basalt —apparently the more widely distributed—appeared at the end of the miocene epoch, whilst the eruption of the newer—commencing towards the close of the pliocene epoch—seems to have been continued into the most recent post-pliocene times. In its physical features the country occupied by these two basalts generally differs very much, and the geological observer has no difficulty in determining the nature of the rock. The older basalt country exhibits gently sloping rises with occasional higher smooth hills, the material above the rock consisting of several feet—in places up to ten feet or more—of a very fertile black, brown, or chocolate coloured soil, which is doubtless the result of long-continued decomposition of the rock. It supports the most profuse and dense vegetation, almost impenetrable scrubs and forests, in which trees of all kinds frequently reach gigantic dimensions—trees ten to twelve feet in diameter at the base and 300 feet and more in height being not uncommon amongst some of the eucalypti—as, for instance, in the ranges east of Berwick, along portions of the Gippsland road, and in the Western Port District. As another effect of the long-continued action of decomposing agencies, the structure of the rock, though sometimes finely columnar or prismatic, is most frequently spheroidal, polygonal, concretionary, and much jointed—characteristic features which render it unfit for use as a building stone but do not affect its applicability for road and railway-ballast metal, for which purposes it deserves to be extensively used. These hard layers usually alternate with layers of an unctuous, frequently amygdaloidal, soft clay, which shows all variations of colour from pure white to dark red, dependent on the amount of hydrous oxide of iron admixed. In some places this clay is thickly traversed in all directions by ferruginous masses, which exhibit in section a concentric shell-like structure, due to the effects of advancing decomposition, and pointing to their representing the nuclei of larger, irregularly-polygonal masses that originally composed the whole mass of the layer—the clay now intervening being the result of the complete decomposition of successive concentric coats of these polygons. These various structures are well exemplified in the North Melbourne Railway and the Flagstaff Hill road-cuttings, but occur most extensively developed on the south coast of Phillip Island, on the shores of Western Port Bay, in the Pentland Hills near Bacchus Marsh, etc. Considering the mode of eruption of the older basalt, the absence of real craters and the general scarcity and in some districts total absence, of points of eruption, are very remarkable, and seem to indicate that the rock mostly issued from large fissures or gigantic dykes; whilst some of the smaller dykes, abundant in some districts (Cape Patterson, Western Port, etc.) may also have contributed their share to the outpour. On this account the specimens in the collection have been classed simply as *basalt*, and not as *basalt-lava*, the term *lava* being applied only to those rocks which have issued from, or whose origin can distinctly be traced to, craters or unmistakable volcanic vents. The newer basalt has in this respect, in contrast to the older, to be called a lava; for its extensive sheets and streams can in every case be traced either to distinct craters or to points of eruption. The latter seem in many instances to be filled-up craters, and show by scoria and cinders, abundantly strewn over their summits and slopes, plain evidence of their original office. As some of the principal craters may be mentioned Mount Franklin, Tower Hill, Mount Eels, Mount Noorat, Mount Napier, etc.; whilst of the great number of conical or mammaloid points of eruption, the three Anakies, Mounts Glasgow, Hepburn, and Buninyong; Kangaroo Hill, Carisbrook Hill, etc., form well-known examples.*

In contrast to that occupied by the older basalt, the newer basalt country generally presents wide, open, mostly rocky plains, studded in parts with conical hills and mountains; only in rare instances are the plains covered with forest trees, which are not nearly of the size and luxuriance of those exhibited by the older basalt; in fact, the boundaries of the newer basaltic sheets and streams are very frequently delineated by the commencement of forests, whilst clusters of trees within the lava-plains generally indicate silurian outcrops. To trace out with any claim to precision the particular portions which each of a number of volcanic hills contributed to an extensive lava-sheet surrounding them is quite an impossibility, its generally even surface between the hills, presenting no lines of demarcation or other guiding marks, and even the rock itself nearer the one or other of the hills, shows no serviceable distinctions either in structure or lithological character. These facts are substantiated by the relations of the numerous volcanic hills with intermediate lava-plains in all parts of the colony, and seem to indicate that the action, if not the origin, of the different points of eruption, within or fringing a defined lava-sheet, was contemporaneous, at least within such limits as to allow of an intermingling and even-spreading of the molten matter. An observation of Mr. Selwyn's in this respect bearing more especially upon the nature of some of the craters and points of eruption is—"That certain features exhibited by some—viz., that the walls of the craters are formed of stratified layers of ash, dipping outwards at a low angle—seem to indicate the probability of their having been sub-aërial volcanic vents, forming low islands in the tertiary seas, under the waters of which the lava streams flowed and were consolidated."

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* *See* Mr. Selwyn's List of Craters and Volcanic Cones, "Exhibition Essay," 1866, p. 34.

As the thickness of the basaltic sheets depends on the features of the original surface over which they spread, it varies accordingly, to a great extent, even within short distances. On the average it may be considered to range from a few feet up to 150 feet. There are exceptional places, however—as, for instance, at Ballarat, where it exceeds 400 feet; but this is due to the lava mass as a whole being composed of several sheets—the so-called first, second, third, and even fourth rocks—erupted and spread over each other at different periods, probably at considerable intervals of time, judging from clay and silt deposits occurring between them. The streams of the newer basalt have performed a most important office for a great number of the goldfields of the colony by preserving large patches of older auriferous drift from the denuding agencies of post-tertiary times; the miners, early recognising this, have reaped its benefits for years. These agencies wrought our present valleys, some even deeper than those of former days, and in doing so have even largely affected the tough mass of the lava itself. To this the numerous larger and smaller outliers of the rock in many valleys—remnants of once continuous lava-sheets—with their rugged outlines and steep rocky escarpments, bear striking testimony. But it is not to the miner alone that the basaltic table-lands prove sources of wealth; the agriculturist also, though in a widely different sense, derives lasting benefit from them. The decomposition of the lava yields, like the older basalts, one of the most fertile, if not the finest soil in the colony; a quality no doubt due to its richness in special alkaline and other salts, necessary or favourable for the growth of cereals and most products of husbandry. But it is apparently not so well adapted for forest growth as the soil of the older basalt, though in many cases of bare plains and patches of this basalt land, the thinness of the soil or decomposed surface-layer, evidenced by the rocky nature of the ground, is undoubtedly the cause of the absence of trees. The colour of this soil is, like that of the older basalt, black or dark-brown, sometimes also reddish-brown to brick-red, and its thickness very variable, ranging on the plains and the tops and slopes of the hills from a few inches to seldom over 3 feet, but reaching 8 feet and more in the flats and gullies running between the hills, or cutting through high plateaux. Irregularly distributed through the soil, both of this and the older basalt, occur nodules of hard, dense basalt, with a brownish surface-crust; concretions of carbonate of lime and magnesia, various in size and shape, and, as a special feature in many places, a kind of small reddish-brown gravel, consisting of bean and kidney-shaped bodies of brown hematite. The small watercourses down the flanks of the hills also generally show titaniferous iron (menaccanite) in greater or less abundance. Beneath the fertile stratum of large portions of the plains there usually occurs a yellowish, tough, and soapy clay of variable thickness. It gradually merges downward into the mass of the rock, and is therefore, no doubt, the result of the decomposition of the lava *in situ*, and not—as might be supposed—a deposit derived from other sources. The peculiar surface-feature of the plains, the network of small, shallow indentations, forming waterpools in winter, is, as it seems, mainly dependent on the existence of this clay. On viewing the steep escarpments of the large plains and outliers, we most frequently observe a vertical, more or less perfectly columnar or prismatic structure, the prisms being mostly 5-sided, sometimes 6-sided. This structure often proves of some advantage to the miner in sinking shafts through the lava for the older gold drifts underneath. On the Kangaroo outliers, in the Loddon Valley, for instance, many shafts may be seen, each of which has been formed by the removal of one of the large lava prisms. Tabular structure is rather rare. A fine instance of it is met with in the neighbourhood of Kyneton, at the Little Coliban River. The rock shows there columnar and tabular structure combined —*i.e.*, on the large scale it is columnar; but each column shows a finely tabular structure by being cleavable into thin slate-like plates, generally at right angles to its main axis; the side planes indicate this structure by parallel striations and grooves, more especially where the rock is affected by decomposition. There are many localities where a nodular, spheroidal, or polygonal structure may be observed, and as a rule in these instances the nodular masses consist of dense, dark rock, showing in section concentric bands of slightly varying texture and colour, whilst mostly a lighter, soft, or friable ferruginous mass fills the interstices between them. The origin of this structure is no doubt similar to that of the older basalt, described in the foregoing.

Another interesting feature not uncommon in the newer basalt of the Western District is large caves, about one of which, situated on the east bank of the Mount Emu Creek, Mr. Selwyn makes the following remarks :—" It contains three large and lofty chambers, connected with each other by narrow passages. The first and largest chamber is 48 by 40 yards ; the next (connected with the former by a short narrow passage), 44 by 27 yards ; and the furthest from the entrance (connected with the larger one by a narrow passage 13 yards long) is about 27 by 15 or 20 yards. Thousands of bats inhabit these caves, hanging in clusters from the roof like a swarm of bees, and on the floor are large conical mounds of a rich brown earthy matter, containing imbedded pieces of crystallised gypsum.* The deposit itself consists entirely of the excrements of the animals. The average height of the chambers is from 15 to 20 feet. No explorations have yet been made in the caves."† Mr. Aplin, formerly of the Geological Survey, explored a large cave near Gisborne in 1856 (*see* plan of cave on Geological ¼ sheet No. 7 N.W.), and found a large number of bones, amongst which Sir Frederick McCoy determined, as the most interesting, remains of "Canis Dingo," or Wild Dog ; " Diabolus (Sarcophilus) Ursinus," or Tasmanian Devil, of which genus no species is at present known living on the Continent of Australia ; " Dasyurus affinis " (McCoy), new species ; " Phalangista," new species ; " Hypsiprimnus trisulcatus " (McCoy), new species.

As regards economic purposes, the newer basalt is of far greater importance than the older ; for besides yielding excellent road-metal, the more compact bluish-grey kinds, commonly called "bluestone," are duly appreciated for architectural and engineering purposes, as fine durable building stone, being easily dressed and procurable in blocks of all dimensions up to 50 cubic feet and more. Flags cut from some occurring in the neighbourhood of Melbourne, and used for portions of the footpaths in the city, have also, as far as experience goes, proved excellent for the purpose.

There are certain occurrences of basalt dykes, the age of which is rather doubtful. Whilst those dykes, occurring, as for instance in the Western Port District, close to or within older basalt areas, are most likely of the age of the latter, a number of dykes exist in some of our western goldfields (Bendigo, Castlemaine, and Stawell), at comparatively considerable distances from basalt centres, and therefore no clue whatever of their age is given. Considering, however, that only the newer basalt occurs around the respective districts, the specimens from some of these dykes in the collection have provisionally been classed as belonging to it.*

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* Small crystals of the rare mineral "struvite," are also abundantly dispersed through the mass, together with the two phosphates " Hannayite " and " Newberyite."

† The deposit has since been used by the farmers of the neighbourhood to great advantage as a valuable manure.

The mode of occurrence of the Bendigo, Castlemaine, and Stawell dykes, which are much decomposed, and called "lava-streaks" by the miners, is of special interest on account of the close association of the dykes with auriferous quartz reefs. These dykes form either the hanging or foot walls of the reefs, or break through the latter from side to side. faulting them more or less—features which indicate that the fissures of the reefs have mostly been the lines of least resistance for their eruption. They could not have had any genetic influence whatever upon the auriferous character of the reefs, on account of their far more recent age. In case of such a dyke traversing and faulting a reef, it may, however, happen that—auriferous shoots or patches being thereby severed and the severed parts dislocated—a level driven in one part does not, on regaining the reef beyond the dyke, strike the corresponding part but poor or barren quartz instead. Speaking generally of the influence which these dykes and both the older and newer basalt exerted upon the rocks they came in close contact with during their eruption, it has, as far as observation extends, been, if any, of but a slight and transient character. Granite underneath basalt-covers has apparently not been affected at all; clay deposits elsewhere of grey or yellow colour, are, under these circumstances, changed to brick-red, and have lost their original toughness; and with regard to silurian strata, the only, though doubtful, indication of a change is a peculiar perforated, as it were, vesicular texture of the slates and sandstones in the immediate neighbourhood of some points of eruption (Mount Consultation, Kangaroo Hill).

Proceeding now to a special description of the older and newer basalts, relative to their lithological character, bearing in mind their essential mineral composition—viz., "augite," "labradorite," and "titaniferous iron," we have in Victoria the three established sub-species—viz., dolerite, anamesite, and basalt, besides an infinite number of varieties dependent on texture and other characters.

(1.) Dolerite, Dolerite Lava.—A crystalline-granular, dark and light-bluish or greenish-grey rock, in which crystals of its principal components, augite and labradorite, can be distinctly recognised by the naked eye. This species has not as yet been observed within the older basalt areas, and is also rare within those of the newer. Principal localities of occurrence are Malmsbury, Kyneton, Gisborne.

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* Mr. Howitt has identified "limburgite" from a "dyke" in the "180" mine, Bendigo. This is merely a form of basalt in which augite, olivine, and magnetite preponderate over or exclude feldspars. It is quite probable that when examined other dykes from the same locality may be referred to this variety.

(2.) Anamesite, Anamesite Lava.—Of bluish or greenish, often brownish-grey or black colour, and distinctly recognisable, yet such a finely crystalline-granular texture, that the component minerals cannot be clearly distinguished without aid of the magnifying glass, and then only by their difference in colour. It is apparently the most prevailing. Its fracture is flat-conchoidal, with a glittering surface, and it is sometimes rendered porphyritic by crystals of *hornblende* and *oligoclase* and grains of *olivine*.

(3.) Basalt, Basalt Lava.—Dark-grey to mostly black, quite homogeneous-looking; in fracture generally somewhat dull, though in some places (Little Coliban River, near Kyneton, Bacchus Marsh, etc.) quite of the aspect of *Lydian stone*.

The texture of these three sub-species is in many places a thoroughly compact one, yet most frequently it is more or less porous and vesicular (honeycombed), the vesicles either showing, though rarely, a glassy surface inside, or being partly or wholly filled or coated with different minerals, whence results *amygdaloidal texture*. These accessory minerals will be described further on. In their mode of occurrence our three sub-species differ in some marked respects from those described from the basalt districts of Europe. The principal difference is that they do not occur in distinct masses with defined outlines, as is stated to be the case there, but form rather irregular portions of undefinable size and shape, graduating one into the other, laterally as well as vertically, throughout the same sheet or stream of lava. They present, in fact, only different forms and stages of mineral aggregation during the cooling of the molten matter. The same quarry frequently yields thus both anamesite and basalt, and besides these a quarry at Malmsbury also produces dolerite. As principal varieties, mostly of basalt proper (all well represented in the collection), may be mentioned:—

(a.) Earthy Basalt, or, as it is called in France and Germany, *Basalt Wacke*—A bluish, greyish, or brownish-black, mottled, earthy-looking, and more or less vesicular mass, with frequently embedded nodules of a denser texture, found in places on top of the plains, and also beneath sheets of hard basalt. It sometimes encloses scales of mica, crystals of hornblende

and oligoclase, and is frequently amygdaloidal, the amygdules consisting of various zeolites, chalcedony, green earth, calcite, aragonite, etc. Much of the older basalt of Phillip Island and the neighbourhood of Melbourne belongs to this variety, which, in fact, in most cases represents nothing else but basalt in an advanced stage of decomposition.

(b.) Basalt Scoria.—Of dark-brown or black colour, highly vesicular or cellular—the vesicles or cells irregular in size and shape, and showing glazed walls very similar to some of the slags of iron-furnaces. It occurs in masses of irregular shape, and of all sizes, principally on the tops and slopes of craters and points of eruption. The same is the case with—

(c.) Basaltic Pumice.—A scoria so spongy and light that it floats on water, and might, except for its black or brownish-black colour, and absence of fibrous texture, be mistaken for true trachyte-pumice.

(d.) Basaltic Ash.—Earthy and compact, ashy-grey or brown, sometimes mottled in these colours. Found near craters and points of eruption frequently in stratified layers. The compact kinds are in some localities (Warrnambool, Terang, etc.) advantageously used as building stone, being, when freshly broken, soft enough to be sawn into blocks of all sizes, but hardening considerably on exposure to the atmosphere.

Both the older and newer basalt rocks are, as already mentioned, rich in accessory minerals, partly original, partly of secondary origin. As the most noteworthy original minerals may be mentioned *Olivine*—common in all our basalts, but more especially characteristic of the newer; in fact, it is so frequent in places as to quite assume the place of an essential constituent of the rock. It is generally of an olive-green, sometimes emerald and bottle-green colour, has a glassy lustre, and appears in grains and larger and smaller nests or polygonal masses, of granular texture, up to several pounds in weight, irregularly distributed through the rock.—(Anakies, near Geelong, in the rim of the crater of Mount Franklin, etc.) It is also met with as nuclei of volcanic bombs in many localities. It seems to decompose more easily than the mass of the rock, leaving behind it a reddish-brown substance, principally consisting of hydrous ferric oxide. A transformation into a reddish-brown micaceous mineral *(rubellan?)* has also been observed in the basalt of some of the Loddon outliers.

Hornblende.—Of a shiny pitch-black colour, often in perfect prismatic crystals up to an inch in length, and ½ inch thick; tolerably frequent in the older basalt of Phillip Island, and occurs in some of the newer basalt areas in very great abundance; for instance, at the Anakies, where the centre one of these three points of eruption is literally strewn over with crystalline pieces and more or less perfect crystals of the mineral.

Oligoclase.—Fairly abundant in the older basalt of Phillip Island, and more especially in the rock of all crater hills and points of eruption of the newer basalt (Mount Franklin, Mount Elephant, Mount Shadwell, Anakies, Learmonth, etc.), occurring in colourless, transparent, translucent, occasionally opaque white, crystalline grains, rarely in perfect crystals, and sometimes in irregularly-shaped bodies above a cubic inch in size. A quantitative analysis by the late Mr. Charles Wood, analyst to the Geological Survey, of specimens from the Anakies, gave—Silica, 64·22; alumina, 23·87; iron sesquioxide, 1·53; lime, trace; magnesia, 0·38; soda, with some potash, 9·87; = 99·87; leaving no doubt about the identity of the mineral.

Less frequent are:—*Mica*—Black or brown magnesia mica, in plates sometimes exceeding a cubic inch in size, occurs occasionally in the older basalt of Phillip Island, and in the newer basalt of the Loddon plain, near the Muckleford Creek, also in a dyke adjoining the Eureka Reef, near Castlemaine, and in some of the basalt dykes of Bendigo and Stawell. *Apatite.*—Found in the older basalt of Phillip Island, in hexagonal prismatic crystals. *Quartz*—Occurs in the newer basalt of Baringhup, near Maldon, frequently in grains and irregular patches of bluish-white colour, and in such association with the rock as to leave no doubt of its original formation in it. In some localities, however—as, for instance, at the Green Hills, near Kyneton, Mount Franklin, Learmonth, Kilmore, Baynton, etc., pebbles and fragments, much fractured and of opaque white colour, are found in the rock, which were no doubt mechanically enclosed during the eruption of the lava. *Obsidian.*—Occurs at Geelong, Ballarat, and in the crater hills and plains of the Western District; in the latter localities generally in small, button-like pieces, and sometimes larger balls, hollow and glazed in the centre. *Tachylite.*—Found at Phillip Island, Richmond, Collingwood, etc. *Zircon and Sapphire.*—Of these two precious stones the zircon alone has been found actually implanted in the rock, and, in one instance only,* but (analagous to European occurrences) they are probably not rare in the basalt of many localities, judging from their frequency in the alluvial or recent gold-drifts of creeks and gullies running between basalt outliers, or cutting through basalt plains; whilst in similar drifts outside the basalt areas, or in the older gold-drifts underneath the basalt, they are either rare or quite absent. (Blue Mountain goldfield, Loddon Valley, Daylesford, etc.). *Black Corundum*—In irregular grains, rare, at Phillip Island, Ballarat, etc.

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* By Mr. Norman Taylor, in the basalt, north of Lake Learmonth, and now in the Mineral Collection.

Amongst the secondary minerals a number of species of zeolites deserve mention, viz.:—*Analcite* and *Natrolite*, in fine crystallisations, very abundant; the latter only occurs in the older basalt. *Gmelinite*, in the amgydaloidal, older basalt of Phillip Island. *Heulandite*, Phillip Island and Maldon; rare. *Chabazite*, in fine druses; frequent in the decomposed older basalt of the Pentland Hills near Bacchus Marsh, also Phillip Island and Gippsland, and in the newer basalt near Malmsbury, Clunes, and Maldon. *Phacolite*, in fine crystallisations, plentiful in the newer basalt of Richmond and Collingwood, and rare in that of Clunes; also at Phillip Island and Flinders in the older basalt. A new form of Phacolite termed *Herschelite* occurs in some of the same localities. *Mesolite;* generally distributed. *Phillipsite*, frequent at Richmond; rare at Malmsbury and Phillip Island. Of other minerals the most abundantly distributed throughout the basaltic areas is *Aragonite*, occurring in fine acicular crystallisations, crystalline coatings, and in nodules with concentric radiating structure. Next in frequency of occurrence, mainly in decomposed basalt, follow:—*Brown Iron-ore Chalcedony* (Phillip Island); *Common Opal*, *Hyalite* (in transparent reniform crusts, various localities); *Calcite*, *Sphærosiderite*, *Green Earth*, *Soapstone*, *Halloysite*, etc. All the species mentioned are represented in the collection of Victorian Minerals.

OLDER BASALT ROCKS.

7.1. ANAMESITE.—Finely crystalline-granular, solid, rendered slightly porphyritic by grains of olivine; shows an imperfectly slaty cleavage.—*One mile east of East Creek, coast of Western Port Bay.*

7.2. ANAMESITE.—Finely crystalline-granular and solid.—*Phillip Island.*

7.3. ANAMESITE.—Very finely crystalline-granular, solid and micro-porphyritic.—*Saltwater River, near Melbourne.*

7.4. ANAMESITE.—Finely crystalline-granular, slightly amygdaloidal.—*Phillip Island.*

7.5. ANAMESITE.—Finely crystalline-granular, rendered porphyritic by small crystals of apatite, a few scales of brown mica, and large crystalline patches of oligoclase and black hornblende. The weathered face appears slightly vesicular, apparently in consequence of the removal, through decomposition, of the hexagonal prisms of apatite.—*Phillip Island.*

7.6. ANAMESITE.—Finely crystalline-granular, and rendered porphyritic by crystals of apatite, scales of brown mica, and patches of a mineral resembling pleonaste.—*Phillip Island.*

7.7. ANAMESITE.—Very finely crystalline-granulur, wackenitic and amygdaloidal, with grains of olivine in course of decomposition; the amygdules consist partly of a steatitic, partly of zeolitic substance.—*Phillip Island.*

7.8. ANAMESITE.—Finely crystalline-granular, but considerably affected by decomposition; wackenitic and amygdaloidal; contains druse-cavities with fine crystals of analcite.—*Phillip Island.*

7.9. BASALT.—Quite dense and compact; rendered porphyritic by small crystals of apatite and large crystalline patches of oligoclase.—*Phillip Island.*

7.10. BASALT.—Dense, with small hackly fracture; rendered slightly porphyritic by grains of olivine and crystals of oligoclase.—*Cape Schanck.*

7.11. BASALT.—Strongly decomposed and partly converted into impure brown iron ore.—*Saltwater River, near Melbourne.*

7.12. BASALT.—Quite decomposed and changed into impure mammillary brown iron ore.—*Saltwater River, near Melbourne.*

7.13. BASALT.—Thoroughly decomposed and altered partly to impure brown iron ore, partly to a baked-looking red and yellow indurated clay.—*North Melbourne.*

7.14. BASALT.—Strongly affected by decomposition; of wackenitic character.—*Coast of Western Port Bay.*

7.15. BASALT.—Strongly decomposed and amygdaloidal. The white mineral forming the amygdules is probably halloysite.—*Stony Hut Creek, Mount Blackwood.*

7.16. BASALT.—Thoroughly decomposed and converted into a brown and white mottled, earthy clay, very light and slightly soapy to the touch.—*Raleigh's Punt, Saltwater River. Geological ¼ sheet 1 N.W.*

7.17. BASALT.—Quite decomposed and changed into a minutely red and white mottled, indurated clay.—*South-west of East Creek, Western Port Bay.*

7.18. BASALT.—Same as foregoing.—*South-west of East Creek, Western Port Bay.*

7.19. BASALT.—Decomposed to red, baked-looking clay, which presents in places quite a porphyritic appearance, imparted by more or less decomposed, glistening grains, probably olivine; shows also small patches of a yellowish-white mineral resembling halloysite.—*Coast of Western Port Bay.*

7.20. BASALT.—Decomposed to red, baked-looking clay. A portion of a lighter shade of red, is slightly vesicular and rendered amygdaloidal by whitish, irregularly-shaped granules of a mineral resembling halloysite.—*Coast of Western Port Bay.*

7.21. BASALT.—Decomposed to grey and white mottled soapy clay, traversed by veins of white, soapy clay.—*West Melbourne.*

7.22. DECOMPOSED BASALT, BASALT WACKE.—A rather porous clayey mass, evidently part of a weathered nodule.—*Narre Warren.*

7.23. DECOMPOSED BASALT, BASALT WACKE.—Highly vesicular, mottled yellow and grey.—*Royal Park, near Melbourne.*

7.24. AMYGDALOIDAL BASALT.—Greenish decomposed base, in which numerous vesicles are developed, some being filled or only lined with natrolite, others lined with natrolite and filled with calcite.—*Chetwynd, Bank of Glenelg River.*

7.25. DECOMPOSED BASALT, BASALT WACKE.—Grey clayey mass of a finely mottled appearance.—*Western Port.*

7.26. VOLCANIC CONGLOMERATE.—Jasper-like, more or less rounded pebbles, cemented by a clayey base; slightly laminated.—*Phillip Island.*

Analyses of the Older Basalts from Phillip Island by Mr. Cosmo Newbery:—

—	I.	II.	III.	IV.	
				a.	*b.*
Silica	25·45	37·22	35·24	34·16	49·46
Alumina	28·67	21·16	17·18	23·22	8·21
Iron sesquioxide ...	12·50	9·11	29·46	12·09	...
Iron protoxide	...	...	...	...	16·32
Lime	6.07	7·02	3·12	5·21	7·26
Magnesia	4·37	6·21	2·08	12·34	18·76
Potash	0·91	8·46	0·06	3·10	...
Soda	5·32		1·62	5·28	...
Mang. protoxide ...	...	...	...	0·46	trace
Titanic acid	...	...	...	0·04	...
Water	15·48	8·80	10·32	2·16	...
	98·77	97·98	99·08	98·06	100·01

I. Decomposed; colour brown, greyish blue and white Specimen dried at 212° F. Loss in weight at a red heat, 15·48 per cent.; portion soluble in acetic acid, 7·35 per cent.; portion soluble in hydrochloric acid, 59·45 per cent.; insoluble residue (clay), 39·72 per cent. The analysis is of the soluble portion.

II. Decomposed; colour light brown. Specimen dried at 212° F. Loss in weight at red heat, 8·809 per cent.; soluble in hydrochloric acid, 59·131 per cent. The analysis is of the soluble portion.

III. Decomposed; colour red. Specimen dried at 212° F. Loss by ignition at a red heat, 10·32 per cent.; soluble in hydrochloric acid, 58·63 per cent. The analysis is of the soluble portion.

IV. Dense black; containing crystalline grains of olivine. Soluble in hydrochloric acid, 49·18 per cent.; insoluble residue, 50·82 per cent. (*a.*) Results of analysis of soluble portion. (*b.*) Results of analysis of insoluble portion.

NEWER BASALT ROCKS.

8.1. **DOLERITE LAVA.**—Coarsely crystalline-granular mixture of labradorite and augite, with much titaniferous iron and small scales of ironglance; highly vesicular.—*Quarries near Malmsbury.*

8.2. **DOLERITE LAVA.**— Rather finely crystalline-granular and slightly porous; rich in specular iron.—*Mount Eckersley, near Heywood.*

8.3. **DOLERITE LAVA.**—Similar to 8.1, but contains larger crystals of specular iron.—*South Clunes.*

8.4. **ANAMESITE LAVA.**— Finely crystalline-granular and rather porous.—*Woorndoo, bank of Salt Creek, Hopkins River.*

8.5. **ANAMESITE LAVA.**—Of a laminated character and much decomposed.—*Woorndoo, bank of Salt Creek, Hopkins River.*

8.6. **ANAMESITE LAVA.**—Rather porous and much decomposed.—*Woorndoo, bank of Salt Creek, Hopkins River.*

8.7. **ANAMESITE LAVA.**— Finely crystalline-granular and rather porous; full of fine scales of ironglance.—*Section* 40 *of Redesdale, Dalhousie.*

8.8. **ANAMESITE LAVA.**—Finely crystalline-granular; full of small grains of olivine; very compact.—*Malmsbury.*

8.9. ANAMESITE LAVA.— Finely crystalline-granular and rather porous ; full of small grains of olivine ; small crystalline grains of magnetic pyrites—more or less converted into brown iron ore—abound throughout the mass, causing it to affect the magnetic needle with a high degree of polarity.—*Magnet Hill, Baynton's Station. Geological ¼ sheet* 51 *S. W.*

8.10. ANAMESITE LAVA.—Very finely crystalline-granular, with large cavities containing aragonite.—*Table Hill, near Guildford.*

8.11. ANAMESITE LAVA.—Finely crystalline-granular; rather porous and rich in fine scales of ironglance.—*Bank of Yarra River, near Footscray.*

8.12. ANAMESITE LAVA.— Finely crystalline-granular and compact, with scattered grains of olivine.—*Yapeen Hill, Campbell's Creek. Geological ¼ sheet* 15 *N.E.*

8.13. ANAMESITE LAVA.—Finely crystalline-granular; shows irregular cavities coated with herschelite.—*Basalt Quarries, Richmond.*

8.14. ANAMESITE.—Very finely crystalline-granular and compact, with thick slaty cleavage. — *From a so-called lava dyke on the Garden Gully line of reef, Bendigo.*

8.15. ANAMESITE.—Very finely crystalline-granular and slightly vesicular; the face coated with small crystals of iron pyrites.—*From a so-called lava dyke, Christmas Reef, at* 215 *feet level, Bendigo.*

8.16. ANAMESITE LAVA.— Finely crystalline-granular and compact; encloses a patch of course-grained vesicular lava, which is slightly magnetic.—*Basalt Quarries, Richmond.*

8.17. ANAMESITE LAVA.—Finely crystalline-granular ; rather porous and vesicular, some of the vesicles contain aragonite.—*Braybrook.*

8.18. ANAMESITE LAVA.— Finely crystalline-granular and compact, with scattered grains of olivine.—*Mirboo, Gippsland.*

8.19. ANAMESITE LAVA.— Finely crystalline-granular and compact.—*Corporation Quarries, Collingwood.*

8.20. ANAMESITE LAVA.—Very porous and affected by decomposition ; traversed by a vein of limonite.—*Malmsbury.*

8.21. ANAMESITE LAVA.—Much decomposed.—*Braybrook.*

8.22. ANAMESITE LAVA.—Finely crystalline-granular and porous.—*Braybrook.*

8.23. ANAMESITE LAVA.—Very finely crystalline-granular; rather porous ; contains abundant fine scales of ironglance, and is traversed by small, more or less parallel, broken veins (originally connected, compressed vesicles) of carbonate of lime.—*South-west corner of township of Mia-mia, Spring Plains.*

8.24. ANAMESITE LAVA.—Very finely crystalline-granular; full of compressed vesicles, some of which being filled with aragonite, resemble irregular broken veins.—*From near Keilor.*

8.25. ANAMESITE LAVA.—Very finely crystalline-granular, rather dull-looking and slightly porous; contains larger irregular cavities coated with carbonate of lime.—*Table Hill, near Guildford. Geological ¼ sheet* 15 *N.E.*

8.26. ANAMESITE LAVA.—Finely crystalline-granular; rather porous; shows attached a curiously-shaped mass resembling a coprolite, which, being harder and denser than the rest of the rock, has probably weathered-out through decomposition of the latter.—*Footscray, near Melbourne.*

8.27. ANAMESITE.—Very finely crystalline-granular, compact, microporphyritic.—*From a dyke north-west of Campbell's Creek, about* 12 *chains north of point where the road from Eagle Tavern to Muckleford passes a small basaltic outlier. Geological ¼ sheet* 15 *N.E.*

8.28. ANAMESITE PORPHYRY.—Very finely-granular, apparently dense and compact black base, impregnated with crystals of hornblende and grains of olivine.—*From a dyke adjoining the Eureka Reef, Castlemaine.* Note.—In some parts of this dyke there occur also large plates (up to 1 inch in diameter) of brownish-black mica. The dyke has apparently exercised neither a disturbing nor a metamorphosing influence upon the reef and adjoining silurian strata.

8.29. BASALT LAVA.—Apparently quite dense and compact; strongly affects the magnetic needle. (*See* specimen No. 8.9).—*Magnet Hill, Baynton's Station. Geological ¼ sheet* 51 *S.W.*

8.30. BASALT LAVA.—Dense and compact, in places slightly vesicular; mottled brownish-red and black.—*Mount Consultation. Geological ¼ sheet* 15 *N.E.*

8.31. BASALT LAVA.—Quite dense and homogeneous, resembling Lydian stone; rendered porphyritic by small grains of olivine and feldspar; slightly vesicular, the vesicles strongly compressed in one and the same direction.—*Little Coliban River, near Kyneton. Geological ¼ sheet* 9 *S.E.* Note.—A very similar variety of basalt occurs also in the neighbourhood of Bacchus Marsh. This rock was used by the natives for fashioning spear-heads, and the sharp-edged fragments for cutting purposes, skinning native animals, etc. These fragments have been carried about and scattered by them over a wide extent of country. They are most frequently met with in the surface soil on the slopes of hills and ranges. One fragment was even found about 280 miles north of Adelaide, near Pekina Station.

8.32. BASALT LAVA.—Same as No. 8.31, but less vesicular. —*Little Coliban River.*

8.33. BASALT LAVA.—Same as foregoing.—*Little Coliban River.*

8.34. BASALT LAVA.—Dense, of earthy appearance ; porous and slightly vesicular ; encloses grains and larger patches of olivine.—*From the bottom floor of the crater of Mount Franklin, near Yandoit.*

Geological Note.—"The crater of Mount Franklin, for some distance down the outside and inside slopes, consists of a mixture of earthy, scoriaceous basalt and real pumice-like scoriæ ; the former containing pieces of transparent oligoclase, and irregular lumps, frequently above several pounds in weight, of olivine, which latter, through partial decomposition, has lost, however, its original green colour, presenting either a uniform brownish-red or brown, speckled with green, appearance. The bottom of the crater, lying about 250 feet below the highest point of the rim, has an area of several acres, and shows two very gentle rises of unequal size divided by a narrow depression. As the whole of this area lies lower than the bottom of the rent in the rim of the crater, through which apparently the latest lava-stream issued, it is probable that its own, as well as the drainage down the inside walls of the crater, having no direct outflow, soaks through the porous basalt of the mantle, and contributes largely to the numerous springs around the foot of the mount." (*Part of Note* 1, ¼ *sheet* 15 *S.E.*) "Towards the north end of the crater, a narrow and very precipitous rent in its side exposes thick, variously coloured beds of volcanic ash, cinders, and scoria-conglomerate, which dip at an angle of 17° towards the centre of the mount. It remains doubtful whether the ravine actually owes its origin to a side outbreak of basaltic lava—the source perhaps of the basaltic stream in the flat below—or, whether it has simply been caused by strong flows of water from the top of the mount." "The basaltic lava streams of the country surrounding Mount Franklin and Franklinford are of two different ages. The older is antecedent to, and has been denuded during the formation of, the present main drainage-channels, and now forms detached patches, capping isolated hills, or long narrow stretches on the tops of ranges. The more recent streams have poured into the present valleys, and, in their gradual descent from high points of eruption, appear, in some cases, to have covered the postpliocene as well as the older and newer pliocene gold-drifts. (*Jim Crow Creek and Mount Franklin streams*). Only where they have acted as natural bars to, or lie in the line of the drainage from higher levels, they are in their turn covered by recent alluvium. (*Patch near Yandoit Swamp, Franklinford, etc.*) As regards lithological character, the two flows present no marked difference." (*Geological Note, ¼ sheet* 15 *S.E.*) "The termination of the Jim Crow Creek flow is characterised by a very rugged surface and rocky escarpments, resembling the recent lava-flows from the craters in the Western District."—(*Note* 8, *Geological ¼ sheet* 15 *S E.*)

8.35. BASALT LAVA.—Texture and general character the same as of No. 8.34; encloses large patches of both olivine and colourless, sub-transparent oligoclase.—*Base of crater of Mount Franklin.*

8.36. BASALT LAVA.—Of earthy appearance and very porous; contains abundant fine grains of olivine, more or less decomposed and showing iridescent tarnish; shows also an incrustation of hyalite.—*From quarries S. W. of Kilmore.*

8.37. BASALT LAVA.—Very dense and compact, and of earthy aspect; shows patches of a porphyritic texture, produced by a black mineral of probably augitic character.—*Ararat.*

8.38. BASALT LAVA.—Dense, of mottled and earthy aspect; has a small hackly fracture arising from its being apparently an aggregation of small roundish or irregular polyhedral bodies. On decomposition of the rock these bodies easily dissociate and form a kind of small gravel.—*Loddon River.*

8.39. BASALT LAVA.—Dense and earthy-looking; with coarse, hackly fracture, due to a similar aggregation of irregular roundish or polyhedral bodies, as in No. 8.38; the bodies however, being larger, the gravel produced on decomposition of the rock is coarser.—*Lower lava-flow of Jim Crow Creek, near Yandoit.*

8.40. BASALT LAVA.—Dense and dull-looking; highly amygdaloidal through partial decomposition. The amygdules—mostly of small size—consist of chabazite and a green clayey mineral. Large partly rounded cavities are coated with fine crystals of chabazite —*Shaft at Degraves' Mill, near Malmsbury.*

8.41. BASALT LAVA.—Dense, and of dull earthy aspect;

much affected by decomposition; shows an imperfect slaty cleavage; a cavity is coated with chalcedony and partially filled with clusters of imperfect prismatic crystals of aragonite. —*Richmond quarries.*

8.42. ANAMESITE LAVA.—Very finely crystalline-granular and highly vesicular, but vesicles, with the exception of a few, mostly small.—*Table Hill, near Guildford. Geological ¼ sheet 15 N.E.*

8.43. ANAMESITE LAVA.—Finely crystalline-granular; consists of a highly vesicular, black portion in contact with a rather compact greyish one.—*Table Hill, near Guildford.*

8.44. ANAMESITE LAVA.—Finely crystalline-granular and very vesicular.—*Richmond quarries.*

8.45. ANAMESITE LAVA.—Very finely crystalline-granular and highly vesicular; vesicles partially encrusted with carbonate of lime.—*Kilmore.*

8.46. ANAMESITE LAVA.—Very finely crystalline-granular and highly amygdaloidal—the amygdules consisting of carbonate of lime.—*Heathcote?*

8.47. ANAMESITE LAVA.—Very finely crystalline-granular and highly vesicular; slightly affected by decomposition; attached to it is a thick tabular mass of aragonite, showing in several places acicular crystals of this mineral.—*Neighbourhood of Dunolly.*

8.48. ANAMESITE LAVA.—Finely crystalline-granular; shows a vein of vesicular rock traversing compact-looking, though minutely porous one; the vesicles of the former are more or less coated with hyalite.—*Section 40 of Redesdale, county of Dalhousie.*

8.49. ANAMESITE LAVA.—Finely crystalline-granular and vesicular; vesicles rather small.—*Loddon River, near Glenlyon.*

8.50. BASALT LAVA.—Dense and highly vesicular; some vesicles exhibit a sub-metallic, ferruginous glaze.—*Peter's Station, near Woodend.*

8.51. BASALT LAVA.—Quite decomposed to a clayey mass of soapy feel; very vesicular or honeycombed.—*Neighbourhood of Heathcote?*

8.52. BASALT.—Very compact and slightly porphyritic, with a somewhat hackly fracture.—*From a dyke, Hustler's Reef, Bendigo.*

8.53. BASALT LAVA.—Rather dense and vesicular; rich in olivine; contains patches of oligoclase, enclosing part of the olivine.—*Learmonth.*

8.54. Basalt Lava, Scoria.—Dark spongy mass, partly coated with a clayey substance.—*Basalt quarries, Richmond, near Melbourne.*

8.55. Basalt Lava, Scoria.—Somewhat twisted and finely-vesicular; of a red colour, due to advanced decomposition.—*From the crater of Mount Buninyong.*

8.56. Tachylyte, Glassy Basalt.—An irregular, slightly vesicular, rather pitch-like mass in part much decomposed.—*Quarries, Collingwood, near Melbourne.*

8.57. Volcanic Conglomerate.—Composed of fragments of scoriaceous basalt; very much decomposed.—*Mount Franklin.*

8.58. Volcanic Tuff.—Consists of consolidated volcanic ash, etc.; partly decomposed.—*Mount Shadwell, near Mortlake.*

8.59. Basalt Lava.—Dense and of a slightly porphyritic aspect, due to enclosed grains of olivine and oligoclase; contains a cavity with crystals of aragonite.—*Learmonth.*

8.60. Basalt Lava.—Dense; in part speckled by some white mineral filling the small vesicles.—*Great Redan Extended Company's mine, Ballarat.*

8.61. Basalt Lava.—Dense and finely porphyritic.—*Barker's Creek, Castlemaine.*

8.62. Basalt.—Earthy and decomposed; partly of a mottled appearance.—*From a dyke, Garden Gully Reef, Bendigo.*

8.63. Basalt.—Decomposed to a clayey mass.—*From a dyke, Garden Gully Reef, Bendigo.*

8.64. Basalt Lava.—Dense and rather dull looking base, enclosing numerous grains of potash-feldspar and quartz.—*Learmonth.*

8.65. Basalt Lava.—Contains numerous vesicles rather compressed and elongated, some of them being large and irregular.—*Dandenong Ranges.*

8.66. Basalt Lava, Scoria.—Full of various sized vesicles; partly coated with a clayey mineral.—*Great North-west Company's mine, Ballarat.*

8.67. Basalt.—Dense; of brecciated appearance, due to enclosed patches of olivine; shows a piece of attached country rock.—*From a dyke, Garden Gully Reef, Bendigo.*

8.68. Basalt.—Similar to 8.67, only has no attached country rock.

8.69. Basalt Lava.—Compact and of rather dull appearance; encloses fragments of a slaty character.—*Gippsland.*

8.70. Basalt Lava.—Dense; contains grains of quartz and olivine.—*Smythesdale.*

8.71. Basalt Lava.—Earthy looking and scoriaceous; encloses crystals and grains of oligoclase and grains of olivine; contains hyalite in some of the cavities.—*Learmonth.*

8.72. Basalt.—Very dense with a small patch showing a coarser structure.—*From a dyke, Garden Gully Reef, Bendigo.*

8.73. Basalt Lava.—Similar to 8.71, only of a lighter colour.—*Learmonth.*

8.74. Basalt Lava.—Contains numerous elongated vesicles, some of which are partly coated with a mixture of aragonite and hyalite; encloses grains of olivine and oligoclase.—*Learmonth.*

8.75. Basalt.—Very dense and of a dull almost earthy aspect, with a coarse, hackly fracture.—*From a dyke, Albion Reef, Stawell.*

8.76. Basalt Lava.—Very dense and porphyritic; owing to decomposition it has been almost entirely converted into a red mass, strongly resembling baked clay.—*From Sir W. J. Clarke's estate, Sunbury.*

8.77. Basalt Lava.—Represents part of a basalt column in the form of an irregular hexagonal prism.—*Woongulmerang, Gippsland.*

8.78. Basalt Lava, Scoria.—A black partly cellular mass, showing a fluidal structure, and enclosing a patch of olivine with a somewhat regular outline.—*Mount Shadwell, near Mortlake.*

8.79 Basalt Lava, Scoria.—Black and very cellular; the cells become very fine as they approach the centre, where a large cavity exists —*Mount Shadwell, near Mortlake.*

8.80. Basalt.—Quite decomposed to a white soapy clay.—*From a dyke, so called "lava," on the Garden Gully line of reef, 140 feet beneath the surface; locality, six miles from Bendigo.*

8.81. Basalt Lava.—Rock mass quite dense, but highly vesicular and scoriaceous-looking.—*Richmond quarries.*

8.82. Basalt Lava.—Similar to No. 8.81.—*Richmond quarries.*

8.83. Basalt Lava.—Of ashy appearance; highly vesicular; vesicles in part strongly compressed; rather light.—*Crater of Mount Franklin.*

8.84. Basalt Lava, Ash Breccia.—Indurated and compacted ash, mixed with pieces of scoria.—*Crater of Mount Franklin.*

8.85. Basalt Lava, Ash Breccia.—Highly indurated and compacted basaltic ash, mixed with fragments of dense basalt and scoria.—*Crater of Mount Franklin.*

8.86. Basalt Lava, Basalt Conglomerate.—Composed of basaltic scoria, ash, and granite detritus.—*Anakies, near Geelong.*

8.87. Basalt Lava, Scoria.—Dense black scoria, showing large, more or less compressed and elongated cells, alternating with smaller ones.—*Crater of Mount Franklin.*

8.88. Basalt Lava, Basaltic Pumice.—Spongy, black scoria; very light.—*Crater of Mount Franklin.*

8.89. Basalt Lava, Basaltic Pumice.—Black, spongy scoria; very light; coated partly by silicate of alumina.—*Crater of Mount Franklin.*

8.90. Basalt Lava, Basaltic Pumice.—Coarsely-cellular scoria; very light; floats on water.—*Point of eruption of Mount Clarke, parish of Havelock.*

8.91. Basalt Lava, Basaltic Pumice.—Finely-cellular (spongy) scoria, traversed by denser bands; very light; floats on water; slightly affected by decomposition.—*Point of eruption of Mount Glasgow.*

8.92. Basalt Lava, Basaltic Pumice.—Very light, finely cellular (spongy) scoria; slightly affected by decomposition; floats on water.—*Point of eruption of Mount Glasgow.*

8.93. Basalt Lava, Basaltic Pumice.—Same as foregoing.—*Point of eruption of Mount Glasgow.*

8.94. Basalt Lava, Basaltic Pumice.—Very light, cellular scoria; cells rather large, and of irregular size; floats on water.—*Point of eruption of Mount Glasgow.*

8.95. Basalt Lava, Basaltic Pumice. — Of similar character as No. 8.94 —*Point of eruption of Mount Clarke, parish of Havelock.*

8.96. Lapilli.—Small, black scoriaceous masses, some of which have an iridescent appearance.—*Mount Shadwell, near Mortlake.*

8.97. Volcanic Bomb.—A somewhat spherical body with the ends drawn out and slightly twisted.—*Mount Shadwell, near Mortlake.*

8.98. Volcanic Bombs.—Similar in form to No. 9.2. Some of these contain nuclei of olivine, surrounded by a coating of lava more or less vesicular.—*Neighbourhood of Crater Hill, Meningorott, 10 miles from Camperdown.*

ANALYSES OF NEWER BASALTS FROM DIFFERENT PARTS OF VICTORIA,

BY MR. J. COSMO NEWBERY.

—	I.		II.		III.		IV.		V.		VI.	
	a.	*b.*	*a.*	*b.*	*a.*	*b.*	*a.*	*b.*	*a.*	*b*	*a.*	*b.*
Silica	34 80	63·39	35·44	54·73	35·71	54·16	34·36	58·02	33·02	55 65	37·42	54·18
Alumina	38·58	16·11	8·13	19·12	40·11	19·27	6·83	23 74	3·67	21·59	39·16	20·26
Iron—Sesquioxide ...	18 07	10·03	31·43	...	13·66	...	37·96	5·27	40·06	8 85	10·58	...
,, Protoxide ..	...	...	...	6·03	...	14 08	...	...	...	...	...	12·43
Lime	7·12	5·26	5·24	10·14	1·07	...	4·26	10·67	5·13	9·95	2·03	3·32
Magnesia	trace	3·41	17·33	5·05	0·52	3 14	12 95	trace	16·41	0·72	1·52	0·60
Potassa	. .	2·21	trace	2·11	6·03	0·85	0·10	2·31	trace	2·11	5·22	8·36
Soda	...		1·40	0·50		7·13	2 91		1·40	trace		...
Manganese—Protoxide	trace	1 01	...	...	...	3·24	...	...	...	...	1·17	1 32
Copper—Oxide ...	..	trace	..	...	...	0·28	...	...	...	...	...	...
Titanic Acid	...	0·63	...	...	0·72	...	...	...	...	...	0·58	...
Water	1·43	...	2·03	...	1·36	...	0·90	...	0·57	1·29	0·98	...
	100·00	102 05	101·00	97·68	99·18	102·15	100·27	100·01	100·26	100·16	98 66	100·47

I. Dense black, with chonchoidal fracture; 5 per cent. soluble in hydrochloric acid.—*a*, analysis of soluble portion; *b*, of insoluble portion.—Parish of Tylden, east bank of Coliban River

II. Dark crystalline-granular (anamesite).—From the Great Durham Extended Company's shaft.—21 per cent. soluble in hydrochloric acid.—*a*, analysis of soluble portion; *b*, of insoluble portion.

III. Black vesicular rock, vesicles containing botryoidal masses of carbonate of lime, separated from the portion analysed.—30·19 per cent. soluble in hydrochloric acid.—*a*, analysis of soluble portion; *b*, of insoluble portion.—Barfold Company's shaft.

IV. Vesicular black basalt.—24·3 per cent. soluble in hydrochloric acid.—*a*, analysis of soluble portion; *b*, of insoluble portion.—Grand Junction Company's shaft, Leigh River.

V. Compact black basalt, from same locality as IV.—31·3 per cent. soluble in hydrochloric acid.—*a*, analysis of soluble portion; *b*, of insoluble portion

VI. Dense black basalt, from the Barfold Company's shaft.—Geological ¼ sheet 13 S.E.—32·46 per cent. soluble in hydrochloric acid.—*a*, analysis of soluble portion; *b*, of insoluble portion.

II.—ROCKS OF SPECIAL CHARACTER AND COMPOSITION, MOSTLY WITHOUT FELDSPAR.

Rocks of this class are, as far as observation extends, very rare in Victoria.

10.1. EPIDOSITE, EPIDOTE ROCK.—A coarsely-granular mixture of yellowish-green epidote and quartz, with scattered crystals of black hornblende; associated with diorite. This rock occurs in the lower silurian ranges, about 2½ miles south-east of Tarilta (a little township on the Kangaroo Creek, seven miles south of Castlemaine), forming a zone of uncertain width between an intrusive patch of diorite and silurian slates and sandstones. (*See* note 20, geological ¼ sheet 15 N.E.) A carefully selected sample of the pure green rock showed a specific gravity of 3·25, and two quantitative analyses by Mr. J. Cosmo Newbery—one of this, the other of a more quartzose portion—gave respectively:—

	No. 1. Dense Green Rock.	No. 2. More Quartzose Sample.
Silica	51·80	59·62
Alumina	20·80	17·86
Sesquioxide of iron	15·20	5·60
Lime	12·20	14·65
Magnesia	traces	traces
Potassa	traces	traces
Soda	traces	traces
Water	—	2·48
	100·00	100·21

The composition of No. 2 agrees tolerably well with that of epidosite, from Canada, analysed by Dr. Sterry Hunt. A calculation to determine the amounts of quartz and pure epidote in rock sample No. 1 gave 16 per cent. of the former and 84 per cent. of the latter. Deducting the former from the silica of the analysis, and calculating the remainder again to percentages, leaves a composition for the epidote which agrees tolerably well with that of the variety *pistacite.—(See "Contributions to the Mineralogy of Victoria,"* by George H. F. Ulrich, F.G.S., page 18).

10.2. EPIDOSITE, EPIDOTE ROCK.—A green and white, in part massive rock; the white colour is due to decomposition of some mineral constituent, which in places has been quite removed, thereby imparting a vesicular appearance.—*Foot of Cape Howe Ranges, Mallacoota Inlet, Gippsland.*

10.3. SERPENTINE.—Resembles precious serpentine, but is rather hard. Might be suitable for ornamental purposes.—*Beechworth District.*

10.4. SERPENTINE.— Of uniform dark-green colour and rather hackly fracture. Probably transmuted diallage rock, with which it occurs associated.—*Mount Wellington, Gippsland.*

10.5. SERPENTINE.—Mottled light and dark green; produced by decomposition of gabbro.— *Waratah Bay.*

10.6. AMPHIBOLITE, HORNBLENDE ROCK.—Compact, dark-green and crystalline-granular mass of hornblende, with some accessory minerals.—*Eaglehawk, Maldon.*

10.7. AMPHIBOLITE, HORNBLENDE ROCK.—Much decomposed.—*Maldon.*

10.8. TREMOLITE ROCK (Grammatite?).—Crystalline-fibrous and white, with small patches of actinolite.—*Eaglehawk, Maldon.*

II.

CRYSTALLINE-SCHISTOSE SILICATE ROCKS; METAMORPHIC ROCKS.

Geological exploration has not disclosed in Victoria the existence of any such extensive tracts of these rocks as occur, for instance, in Europe, and more especially in North America, Only two localities are known where, comparatively speaking, large areas are occupied by them. One of these, which surrounds a central mass of granite, is west of the Grampians, near the western boundary of the colony; the other is in the eastern and north-eastern part of Gippsland, and within it lies the Omeo gold-field. The rocks exposed at both localities are generally very similar in character, representing *gneiss* and foliated *mica*, *chlorite*, *talc*, *serpentine schists*, and *argillaceous mica-schists*, with intercalated layers and irregular masses of hard brown *quartzite*, the whole abundantly traversed by larger and smaller veins of white quartz. Of the age and relations of these rocks nothing definite is known at present; the probabilities are that the rocks of the first locality either belong to a formation older than lower silurian, or represent highly metamorphosed lower beds of the Grampian upper palæozoic series, whilst the Gippsland rocks may either be older than lower silurian, or form metamorphosed upper silurian beds. Smaller developments of these crystalline-schistose rocks of lower and upper silurian age are, however, very abundant; in fact, they occur zone or mantle-like round all the granite areas; and certain species, though of less extent, occur round all the massive outcrops of greenstone or other plutonic rocks. The width of these metamorphic envelopes is rather limited, one or two miles being perhaps the average, and it is generally greater in the direction of the strike than across it. Definite outside boundaries cannot, however, be fixed, for the reason that the crystalline-schistose character, whilst most complete and intense along the lines of junction with and in the immediate neighbourhood of the plutonic rock, becomes gradually weaker and weaker, or less pronounced, the further away from it, until it insensibly disappears. From the fact that the prevailing strike and dip of the strata is in most cases not in any way influenced by the granite, the one or other being frequently right on to or against it, Mr. Selwyn's proposition "that many of the granite masses are in no sense intrusive or irruptive, but represent in reality the completely transmuted ends of the silurian rocks," receives strong confirmation. For the change of the latter into granite, the chemical composition of the two rocks presents no valid hindrance, as clearly shown by the results of chemical analysis; but even without these data, a number of occurrences (for instance, near Mount Tarrangower, Mount Kingower, Mount Korong, etc.) demonstrate the change ocularly. Prominent amongst these are the so-called *inliers* of silurian rock—small patches, some half an acre in extent—right within the granite masses; for, whilst at the surface still plainly exhibiting stratigraphical features, *i.e.*, strike and dip accompanied by generally a gneissose or *hornfels*-like character, these distinctions gradually disappear, not only round the margins of the inliers, but more conspicuously in depth, as clearly seen in favourable sections, and the transformation of the schist into granite is unmistakeable. A singular feature in connection with this is, that both strike and dip of these inliers are usually the same as, or but little discordant with, those of the main formation nearest outside the granite masses.

As regards the species of crystalline schists occurring within the metamorphic girdles, nearly all the principal ones, with numerous varieties, have been observed either in the one or other part of the colony, and are represented in the collection, those of lower silurian age being the most abundant. The rarest is *granulite* (*leptinite*), whilst varieties of *argillaceous mica-schist*, especially the peculiar *knotted* or *nodular* schists are the most frequent. True *gneiss* is also rather scarce; but a peculiar rock, to which the name *cornubianite* has been given (from its great abundance in Cornwall), is very common; in texture and general character it is more nearly related to gneiss than to any other species. and is therefore considered a variety of it. Diorite greenstone-masses, which occur within districts occupied by upper silurian strata, have converted these rocks into *cherty* or *jaspery quartzites*, though usually only for some short distance from the boundary of the greenstone.

From an economic point of view, these rocks have proved of importance for the production of excellent flagstones of the *knotted argillaceous mica-schist* character, which have now entirely superseded the once largely imported Scotch flagstones.

They are found in several localities, the principal one being in Specimen Gully, Barker's Creek, near Castlemaine, where extensive quarries have been opened, producing flags of first-rate quality, and of all sizes up to 80 feet square and larger. The cleavage of these flagstones is coincident with their dip, *i.e.*, nearly vertical, a feature greatly favouring the quarrying operations. Impressions of *graptolites*, though rather weak and imperfect, have occasionally been observed in these flag-beds. Among the mineral deposits occurring in these rocks may be mentioned the copper lodes of Bethanga. These lodes contain copper in the form of chalcopyrite, and are auriferous, but being associated with deleterious minerals they are rather difficult to treat. Masses of argentiferous phosphate of lead (pyromorphite), with the sulphide, sulphate, and carbonate, have been found in a creek near Roseneath, evidently representing lodes in the metamorphic area of that neighbourhood.

Auriferous quartz reefs, some very rich, occur and are worked at Maldon, Stawell, Kingower, etc.

Touching the character of these and auriferous reefs in general, the most important points will be discussed further on under "Silurian Unaltered Rocks."

For the purpose of showing their geological age, and assimilating their classification to that adopted for the aqueous rocks, the specimens in the collection have been arranged according to the different geological formations they have been derived from.

METAMORPHIC ROCKS OF LOWER SILURIAN AGE.

11.1. GNEISS.—Medium-grained; feldspar in less quantity than quartz and mica, and slightly decomposed.—*From the granite boundary north-east of parish of Baynton. Geological ¼ sheet 51 S W.*

11.2. GNEISS.—Medium-grained; delicately laminated; laminations of mica extremely fine-scaly.—*Granite boundary near Kingower.*

11.3. GNEISS.—Medium-grained; lamination even but rather weak.—*Beechworth.*

11.4. GNEISS.—Rather coarse-granular and indistinct lamination.—*Beechworth.*

11.5. GNEISS.—Rather coarse-granular and slightly laminated; rich in black mica.—*Beechworth.*

11.6. GNEISS.—Highly feldspathic and of a somewhat gritty appearance.—*Yackandandah.*

11.7. GNEISS.—Fine and coarse-grained mixed, the former well laminated and the latter imperfectly so, with large scales of white mica.—*Yackandandah.*

11.8. GNEISS.—Fine-grained and rich in mica.—*Beechworth.*

11.9. GNEISS.—Fine-grained and coarsely laminated; rather poor in mica.—*From the tin mines, Upper Murray.*

11.10. GNEISS.—In part rather coarse-grained mixture of quartz, feldspar and silvery mica; exhibits a slight hackly fracture, lamination imperfect.—*From the tin mines, Upper Murray.*

11.11. GNEISS, CORNUBIANITE.—Mica grey and black and very fine-scaly, intermixed with quartz and feldspar; appearance in cross-fracture fine-granular and laminated; tough; cleavage irregular.—*Pyrenees.*

11.12. GNEISS, CORNUBIANITE.—Very fine-grained, laminated, soft rock, consisting principally of very fine-scaly greyish-white mica intermixed with little quartz and feldspathic matter; spotted with small patches and alternating with bands of fine-scaly black mica.—*Granite boundary, Kingower.*

11.13. GNEISS, CORNUBIANITE.—A fine-granular mixture of fine-scaly black mica, quartz, and some feldspar; cleavage indistinct and uneven; resembles in composition a highly micaceous granite.—*Granite boundary, Mount Korong.*

11.14. GNEISS, CORNUBIANITE.—A fine-granular mixture of small-scaly greenish-grey mica and quartz; might, from its thick-slaty or tabular cleavage be called a flagstone.—*Kingower.*

11.15. GNEISS, CORNUBIANITE.—Finely crystalline-granular mixture of mica, quartz and feldspar, resembling very fine-grained granite; structure indistinctly laminated; traversed by a small quartz vein.—*From the granite boundary, Pyrenees.*

11.16. GNEISS, CORNUBIANITE.—Finely crystalline-granular mixture of much mica, some feldspar, quartz and apparently chloritic matter; tough, with a tendency to lamination.—*From the granite boundary, Inglewood.*

11.17. GNEISS, CORNUBIANITE. — A very fine-granular, crystalline mixture of mica, quartz and feldspar; in parts very micaceous; traversed by feldspathic granite veins.—*From the granite boundary near Bendigo.*

11.18. GNEISS, CORNUBIANITE.—Very finely crystalline-granular compound of quartz, feldspar and some white mica, laminated by thin seams of very fine-scaly black mica; similar in appearance to No. 11.15, but finer-grained.—*Maryborough.*

11.19. GNEISS, CORNUBIANITE.—Mica very fine-scaly, intermixed with quartz and feldspar; delicately laminated; cleavage very imperfect; fracture shows fine-granular structure.—*Twist's Creek, near Beechworth.*

11.20. GRAPHITE-SCHIST.—Consists of finely laminated scales of graphite, with quartz and clayey matter.—*Daylesford.*

11.21. MICA-SCHIST.—Of common character; mica black and white, or grey intermixed and rather small-scaly.—*Robertson's Station, Koroit Creek.*

11.22. MICA-SCHIST.—Of common character; percentage of interlaminated quartz very small; mica very fine-scaly.—*Granite boundary, Kingower.*

11.23. MICA-SCHIST.—Fine-scaly, greyish-green mica, with but little interlaminated quartz; highly concretionary.—*Granite boundary, Kingower.*

11.24. MICA-SCHIST.—Of common character; poor in quartz; finely laminated; cleavage uneven and imperfect.—*Yackandandah.*

11.25. MICA-SCHIST.—Of a plicated structure and silvery lustre due to scales of white mica.—*Twist's Creek, near Beechworth.*

11.26. MICA-SCHIST.—Consists of alternate even dark and light laminations; mica fine scaly.—*Twist's Creek, near Beechworth.*

11.27. MICA-SCHIST.—Of reddish appearance with finely plicated flaky structure.—*Twist's Creek, near Beechworth.*

11.28. MICA-SCHIST.—Resembles No. 11.27, only more compact and argillaceous.—*Twist's Creek, near Beechworth.*

11.29. MICA-SCHIST.—Of common character; both black and white are present in small quantity.—*From the tin mines, Upper Murray.*

11.30. MICA-SCHIST.—Of fine plumese structure; silvery lustre; cleavage very irregular.—*Frenchman's Creek, Balmoral.*

11.31. SPOTTED ARGILLACEOUS MICA-SCHIST.—Of grey spotted appearance with satiny lustre; cleavage even but rather weak.—*Two Mile Creek, near Beechworth.*

11.32. ARGILLACEOUS MICA-SCHIST.—Rather finely laminated; cleavage strong and even.—*Wooragee, near Beechworth.*

11.33. SPOTTED ARGILLACEOUS MICA-SCHIST.—Lustre satiny; very fine, almost indistinct lamination; slightly spotted by some mineral grains.—*Taylor's Gap, near Beechworth.*

11.34. ARGILLACEOUS MICA-SCHIST.—Compact and woody structure; cleavage planes smooth with a fine satiny lustre.—*Madman's Gully, near Beechworth.*

11.35. ARGILLACEOUS MICA-SCHIST.—Slightly undulating lamination; cleavage good but uneven; traversed by a number of small veins; lustre satiny.—*Twist's Creek, near Beechworth.*

11.36. SPOTTED ARGILLACEOUS MICA-SCHIST. — Lustre rather dull and wavy; contains grains or crystals of some black mineral; cleavage uneven.—*Twist's Creek, near Beechworth.*

11.37. ARGILLACEOUS MICA-SCHIST.—Compact and rather hard; cleavage strong and even; weak satiny lustre; contains small grains of tourmaline.—*From the tin mines, Upper Murray.*

11.38. CHIASTOLITE-SCHIST. — Cleavage of rock rather uneven; chiastolite crystals small and decomposed.—*Occurs as boulders in the drift of Mercer's Hill, Geelong.*

11.39. CHIASTOLITE-SCHIST.—Cleavage imperfect; chiastolite crystals rather small and decomposed.—*Granite boundary, Ararat.*

11.40. CHIASTOLITE-SCHIST.—Chiastolite crystals somewhat distinct but small and decomposed; character of base that of a micaceous mudstone; cleavage quite imperfect.—*Inglewood.*

11.41. CHIASTOLITE-SCHIST.—Cleavage very uneven; chiastolite crystals fresh and glassy, but very attenuated.—*Baynton's Range, County of Dalhousie. Geological ¼ sheet 5 N. W.*

11.42. CHIASTOLITE-SCHIST.—Has the character of a mudstone; chiastolite crystals small and very imperfect.—*Pyrenees.*

11.43. ARGILLACEOUS MICA-SCHIST, KNOTTED SCHIST, METAMORPHIC FLAGSTONE.—A compound of fine-scaly, grey mica and argillaceous matter, densely filled with blackish-green granules, supposed to be of *fahlunitic* character; cleavage that of a flagstone.—*Granite boundary, Kingower.*

11.44. ARGILLACEOUS MICA-SCHIST, KNOTTED SCHIST, METAMORPHIC FLAGSTONE.—Character of rock the same as No. 11.43.—*Granite boundary, Kingower.*

11.45. ARGILLACEOUS MICA-SCHIST, METAMORPHIC SCHIST.—Fine-scaly, greyish-white mica, mixed with argillaceous matter and presenting a porphyritic appearance, due to enclosed small granules and patches of extremely fine-scaly black mica.—*Granite boundary, Kingower.*

11.46. ARGILLACEOUS MICA-SCHIST, KNOTTED METAMORPHIC SCHIST.—Full of fahlunitic grains; rather soft; cleavage uneven; traversed by quartz veins.—*Granite boundary, Kingower.*

11.47. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Rather hard; cleavage uneven; densely filled with fahlunitic grains of some size and apparently undecomposed.—*Granite boundary, Kingower.*

11.48. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—A soft mudstone base, with rather even cleavage; full of decomposed fahlunitic grains.—*Granite boundary*, *Kingower.*

11.49. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Has the character of a mudstone, and is filled with fahlunitic grains, which being more or less removed by decomposition render the rock porous.—*Bendigo.*

11.50. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Rather soft; lustre dull; cleavage uneven; full of rather large oblong grains of a fine-scaly micaceous character and somewhat decomposed appearance.—*Granite boundary*, *Kingower.*

11.51. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Has the character of a mudstone. The sparingly enclosed fahlunitic grains or concretions are more or less decomposed to a ferruginous substance resembling impure brown iron-ore; cleavage uneven.—*Granite boundary*, *Kingower.*

11.52. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Character that of a soft mudstone; full of small fahlunitic grains, which, being on the surface removed by decomposition, render the rock very porous; cleavage imperfect.—*Dunolly.*

11.53. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Shows a weak silky lustre, and encloses abundant fahlunitic grains; cleavage uneven.—*Talbot.*

11.54. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Very micaceous; full of rounded granules that appear to be of a fine-scaly micaceous character; cleavage rather perfect.—*Pyrenees.*

11.55. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Has the character of an indurated micaceous shale, and encloses abundant black, apparently micaceous granules, more or less affected by decomposition; cleavage imperfect.—*Granite boundary*, *Kingower.*

11.56. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Similar to No. 11.55, but cleavage more perfect; has the appearance of a flagstone but is too soft for use.—*Granite boundary*, *Kingower.*

11.57. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Soft and shaly, and slightly greasy to the touch; full of small ferruginous granules and concretions which are probably due to the decomposition of a fahlunitic mineral.—*Granite boundary*, *Bendigo.*

11.58. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Like a mudstone in character; thinly veined by slightly ferruginous bands, and full of small, oblong, more or less decomposed granules of uncertain mineral character.—*Pryenees.*

11.59. ARGILLACEOUS MICA-SCHIST, NODULAR METAMORPHIC SCHIST.—Has the character of a very soft mudstone, and is full of blackish granules of probably fahlunitic character. —*M'Intyre.*

11.60. ARGILLACEOUS MICA-SCHIST, SPOTTED METAMORPHIC SCHIST.—Soft-looking, but rather tough; appears to be an indurated mudstone. The white spots are due to fractured granules of probably feldspathic character.—*Granite boundary, Mount Korong.*

11.61. ARGILLACEOUS MICA-SCHIST.—Finely laminated; in part micaceous on cleavage faces.—*Twist's Creek, near Beechworth.*

11.62. ARGILLACEOUS MICA-SCHIST, KNOTTED METAMORPHIC SCHIST.—Lustre satiny; structure strongly knotted; cleavage very irregular.—*Buckland's Gap, near Beechworth.*

11.63. ARGILLACEOUS MICA-SCHIST. — Slightly plicated; contains a few quartz laminations; lustre strong satiny.—*Buckland's Gap, near Beechworth.*

11.64. ARGILLACEOUS MICA-SCHIST. — Rather soft and argillaceous; contains cavities caused by the removal of some mineral substance.—*Taylor's Gap, near Beechworth.*

11.65. ARGILLACEOUS MICA-SCHIST.—Of a somewhat woody fibrous structure and finely laminated; lustre satiny.—*Hills south of Wooragee, near Beechworth.*

11.66. ARGILLACEOUS MICA-SCHIST, KNOTTED METAMORPHIC SCHIST.—Similar to 11.62, only of a lighter colour.—*Buckland's Gap, near Beechworth.*

11.67. SPOTTED ARGILLACEOUS MICA-SCHIST.—The spotted character is due to the presence of some black mineral; has a slightly knotted appearance; lustre dull.—*Twist's Creek, near Beechworth.*

11.68. ARGILLACEOUS MICA-SCHIST.—Hard and rather dense; lamination and cleavage irregular and indefinite.—*Beechworth.*

11.69. SPOTTED ARGILLACEOUS MICA-SCHIST.—Full of small mineral grains; rather soft and clayey.—*Two Mile Creek, near Beechworth.*

11.70. ARGILLACEOUS MICA SCHIST.—Compact and rather granular; cleavage imperfect; lustre dull.—*Buckland's Gap, near Beechworth.*

11.71. ARGILLACEOUS MICA-SCHIST.—Of a somewhat woody fibrous structure and finely laminated; satiny lustre.—*Hills south of Wooragee, near Beechworth.*

11.72. ARGILLACEOUS MICA-SCHIST. — A granular-looking portion with imperfect and uneven cleavage, traversed by small veins, in contact with a more cleavable one; the whole spangled with scales of white mica.—*Taylor's Gap, near Beechworth.*

11.73. SPOTTED ARGILLACEOUS MICA-SCHIST. — Cleavage and lamination indistinct; devoid of lustre and of mottled appearance.—*Beechworth.*

11.74. SPOTTED ARGILLACEOUS MICA-SCHIST. — Compact and slaty; spotted with decomposed brown prismatic crystals. —*German Reef, Maldon.*

11.75. ARGILLACEOUS MICA-SCHIST.—Very argillaceous and soapy to the touch; cleavage strong and even; shows well-marked dendrites.—*Bendigo.*

11.76. ARGILLACEOUS MICA-SCHIST, SPOTTED METAMORPHIC SCHIST.—Identical in appearance and character to No. 11.60.—*Granite boundary, Mount Korong.*

11.77. ARGILLACEOUS MICA-SCHIST, MOTTLED METAMORPHIC SCHIST.—Mottled brown and dull bluish-grey; very micaceous; has the character of an indurated mudstone.—*Pyrenees.*

11.78. ARGILLACEOUS MICA-SCHIST, MOTTLED METAMORPHIC SCHIST.—Minutely, though rather indistinctly mottled in yellowish-grey and brown; soft and friable; apparently a mudstone slightly metamorphosed.—*Pyrenees.*

11.79. ARGILLACEOUS MICA-SCHIST, METAMORPHIC FLAGSTONE.—Full of minute oblong granules, of probably fahlunitic character; cleavage that of flagstone and very smooth and even.—*Sandy Creek, near Mount Tarrangower.*

11.80. ARGILLACEOUS MICA-SCHIST, METAMORPHIC SCHIST. —Mottled and concretionary in appearance; cleavage rather uneven. — *From the tunnel of the Mount Tarrangower Tunnelling Company.*

11.81. ARGILLACEOUS MICA-SCHIST.—Lustre satiny, very fissile; cleavage planes uneven; in parts finely though irregularly wrinkled.—*Maryborough.*

11.82. ARGILLACEOUS MICA-SCHIST.—Of the same character as No. 11.81.—*Maryborough.*

11.83. METAMORPHIC SANDSTONE. — Fine-grained, highly micaceous and concretionary.—*Granite boundary, Bendigo.*

11.84. METAMORPHIC SANDSTONE. — Very fine-grained, quartzose, and slightly micaceous; cleavage imperfectly slaty; mottled and concretionary in appearance.—*Tunnel of Mount Tarrangower Tunnelling Company.*

11.85. NODULAR METAMORPHIC SANDSTONE.—Very fine-grained and micaceous; full of greenish-black, rounded concretions, which are probably of the same fahlunitic character as the small granules in the metamorphic schists.—*Granite boundary, Kingower.*

11.86. NODULAR METAMORPHIC SANDSTONE.—Very fine grained and highly micaceous; full of black concretions as in No. 11.85.—*Granite boundary, Kingower.*

11.87. NODULAR METAMORPHIC SANDSTONE.—Very fine-grained and micaceous; with indistinct dark-coloured concretions of seemingly more micaceous character than the surrounding base.—*Granite boundary, Kingower.*

11.88. NODULAR METAMORPHIC SANDSTONE.—Resembles an indurated sandy shale; very fine-grained and minutely micaceous; full of large concretions lighter coloured than the base, but apparently of the same mineral character.—*Granite boundary, Kingower.*

11.89. NODULAR METAMORPHIC SANDSTONE.—Very fine-grained, argillaceous, and minutely micaceous—in part ferruginous; densely filled with small, rounded, dark-coloured concretions and white or light-coloured patches.—*Granite boundary, Bendigo.*

11.90. METAMORPHIC SANDSTONE. — Very fine-grained, dense, and highly micaceous.—*Granite boundary, Kingower.*

11.91. METAMORPHIC SANDSTONE.—Very fine-grained, dense, and quartzose; upon the cleavage planes highly micaceous.—*Granite boundary, Mount Korong.*

11.92. METAMORPHIC SANDSTONE (Hornfels).—Very fine-grained, dense, and siliceous; full of minute grains of a greyish-white mineral of probably feldspathic character.—*Granite boundary, section X, Morang.*

11.93. METAMORPHIC SANDSTONE (Hornfels).—Very hard, finely crystalline-granular, and compact.—*Granite boundary, Mount Beckworth.*

11.94. METAMORPHIC SANDSTONE (Hornfels).—Very fine-grained and dense; minutely mottled by a greyish-white, probably feldspathic mineral; traversed by numerous small strings of quartz of greasy lustre; one face in contact with argillaceous mica-schist.—*Granite boundary, Ararat.*

11.95. METAMORPHIC SANDSTONE. — Highly quartzose; cleavage rather slaty; might be called an impure quartzite-schist.—*Loddon River, near Mount Tarrangower.*

11.96. METAMORPHIC FLAGSTONE.—An altered sandstone; finely gritty in cross-fracture; cleavage that of a flagstone and rather regular and even.—*Specimen Gully*, *Barker's Creek*, *near Castlemaine.*

11.97. METAMORPHIC SANDSTONE.—Very fine-grained and micaceous; rather slaty and laminated; apparently but slightly metamorphosed.—*Granite boundary*, *Kingower.*

11.98. METAMORPHIC QUARTZ ROCK.—Fine-granular, dense, and hard.—*Loddon River.*

11.99. METAMORPHIC QUARTZ ROCK.—Fine-granular, dense, and hard.—*Granite boundary*, *Mount Beckworth.*

11.100. METAMORPHIC QUARTZ ROCK.—Very fine-granular and full of dark, rounded, concretionary bodies, of apparently micaceous character; indistinctly laminated; contains a few crystals of arsenopyrite scattered through the mass.—*Granite boundary*, *Kingower.*

11.101. METAMORPHIC QUARTZ ROCK.—Identical in character with No. 11.100, but arsenopyrite absent.—*Granite boundary*, *Inglewood.*

11.102. METAMORPHIC QUARTZ ROCK.—Rather coarsely-granular; in parts slightly micaceous; rendered laminated in appearance by thin granitic veins and seams of fine-scaly black mica.—*Granite boundary*, *Inglewood.*

11.103. METAMORPHIC SANDSTONE.—Altered to a dense, very fine-grained, light and dark quartzite.—*German Reef*, *Maldon.*

11.104. METAMORPHIC SANDSTONE.—A dense, black, granular rock, with irregular fracture; resembles a dense basalt.—*Near Beechworth.*

11.105. METAMORPHIC SANDSTONE.—Very fine-grained; dense and homogeneous; has an even chonchoidal fracture.—*Kilmore.*

11.106. METAMORPHIC SANDSTONE.—Composed of intermixed portions of a granular siliceous character, with very dense and fine-grained ones; traversed by a thin vein of quartz.—*Tallarook*, *Goulburn River.*

METAMORPHIC ROCKS OF UPPER SILURIAN AGE.

12.1. GRANULITE (LEPTINITE, WHITESTONE).—A finely crystalline-granular, indistinctly laminated compound of white feldspar, quartz, and white mica, through which are abundantly distributed small crystals of red garnet.—*Beechworth District.*

12.2. MICA-SCHIST.—Silvery-white mica, of radiated fan-like arrangement, interlaminated with a little quartz.—*Lady Franklin Hill, Barnawartha.*

12.3. ARGILLACEOUS MICA-SCHIST. — Very argillaceous; cleavage most irregular and of a somewhat splintery nature; full of ferruginous bands.—*Carlyle.*

12.4. METAMORPHIC QUARTZ ROCK (METAMORPHOSED SHALE).—Shale altered by contact with greenstone into a very fine-granular, apparently quite dense and homogeneous quartzite, showing highly ferruginous, brownish-red, and brown bands alternating with bands of a grey colour, the rock bearing on this account a close resemblance to "riband jasper." Some of the bands are cavernous, and one has a conglomeratic appearance, due to a kind of nodular or concretionary structure.—*From a hill twelve miles north-east of Bendigo.*

12.5. METAMORPHIC QUARTZ ROCK (METAMORPHOSED SHALE).—Of similar character to No. 12.4. —*From a hill twelve miles north-east of Bendigo.*

12.6. METAMORPHIC QUARTZ ROCK (METAMORPHOSED SHALE).—Of similar character to Nos. 12.4 and 12.5, but slightly ferruginous and banded in very faint shades of greenish and yellowish-grey colour.—*From a hill twelve miles north-east of Bendigo.*

12.7. METAMORPHIC QUARTZ ROCK (METAMORPHOSED SHALE).—Of similar character to No. 12.6, but banded structure (yellowish-grey and black) very distinct and some of the bands have a more coarsely-granular texture.—*From a hill twelve miles north-east of Bendigo.*

12.8. METAMORPHIC QUARTZ ROCK. — Distinctly fine-granular and densely impregnated with grains and crystals of decomposed feldspar, which impart to the rock a porphyritic appearance; in parts slightly porous.—*From between Violet Town and Seymour.*

12.9. METAMORPHIC QUARTZ ROCK.—Fine-granular, compact, and tough.—*Costerfield.*

12.10. METAMORPHIC SANDSTONE.—Fine-grained and highly micaceous; full of irregular, small, ferruginous quartz veins, which, being more or less decomposed, present partly open fissures; slightly laminated.—*From between Violet Town and Seymour.*

III.

AQUEOUS ROCKS; SEDIMENTARY ROCKS; STRATIFIED ROCKS.

THE rocks comprised under this head are always regularly stratified — *i.e.*, arranged in distinct and defined "layers," "beds," or "strata," of greater or less extent. They form the greater part of the crust of the earth, as far as the same is open to our inspection, and owe their origin for the most part to the mechanical action of water on material derived from the disintegration of pre-existing rocks (hence the term "derivative rocks" sometimes applied to them) and partly to chemical changes, either ordinary or exerted through the organic agencies of plants or animals. Regarding these different modes of origin we may therefore divide the aqueous rocks into two main divisions, viz — 1. Mechanically-formed rocks; and 2. Chemically-formed rocks; the latter include as a subdivision the organically-formed, or simply, organic rocks. The mechanically-formed rocks may, according to their texture and composition, be subdivided into conglomerates, breccias, sandstones, quartz rocks, shales, mud-stones, clay-slates, clays, and earths; whilst the chemically-formed rocks are represented by the various limestones, gypsum, coal, etc. The quartz rocks, it might perhaps be considered, ought more properly to have been included amongst the chemically-formed rocks, as their origin may have been partly due to chemical action; some appear to be certainly of mechanical-sedimentary origin, and as there is uncertainty regarding others, it seemed more advisable to class them as "mechanically-formed."

Nearly all these kinds of rocks occur in each of the great geological formations, viz.: — The Palæozoic, or Primary; the Mesozoic, or Secondary; and the Cainozoic, or Tertiary, up to the Recent; and as these formations are all represented in this colony, either by one or more of their main subdivisions, the arrangement of the specimens in the collection strictly in accordance with the above scheme, without any reference to their geological age, would have been connected with the great disadvantage of placing specimens from the oldest to the newest formations indiscriminately side by side. Some of the sandstones, the quartzites, limestones, etc., of the upper divisions of the tertiary formation differ, for instance, neither in solidity, hardness, or general lithological character from those derived from the secondary or primary formations; in fact, several are quite identical in texture, composition, and appearance. In order to avoid this intermixture and to render the collection more instructive, a stratigraphical arrangement has been made subordinate to the above classification.

PRIMARY OR PALÆOZOIC ROCKS.

LOWER PALÆOZOIC SILURIAN.

As far as our geological knowledge of this colony extends, the oldest rocks as yet recognised are of silurian age. They occupy amongst the aqueous rocks by far the greatest area, and occur from sea-level up to the tops of mountains over 6000 feet in height. On account of the great amount of folding and other disturbances the strata have been subjected to (as evidenced by the alternation of anticlinal and synclinal axes), often at very short distances apart, the whole thickness of the formation cannot be accurately determined; Mr. Selwyn estimated it approximately as at least 35,000 feet. From the numerous fossils discovered in all parts of the series, Sir Frederick McCoy was enabled to subdivide the formation into lower and upper silurian, corresponding as homotaxeous deposits with those of the same designation in Great Britain and other countries.

The lower silurian series are characterised by numerous typical genera and species of *graptolites*, less abundantly by a small crustacean *hymenocaris*, and rarely by *siphonotreta* and *lingula*. They are principally developed as the "true bottom-rock" in our western goldfields, and consist—as exemplified in the collection—of a (lithologically) little-varying series of hard, quartzose, gritty, and soft micaceous sandstones, slates, and mudstones—conglomerates, breccias, and quartz rocks being rather scarce, and limestones having not as yet been met with. Owing to the rarity or absence of such distinctive beds as these, and to the general similarity of character and texture prevailing amongst the sandstones, mudstones, and slates, as well as to the want of variety in the fossil forms, which are almost solely confined to the slates—for instance, the same genera and species of graptolites being met with throughout the series—no means exist at present for identifying individual beds, or for separating this formation into groups or subdivisions. The general strike of the strata is nearly meridional, or from 35° west of north to the same east, and the dip is almost invariably at high angles, varying from 60° to vertical. Amongst the slates and argillaceous beds, true slaty cleavage is of common occurrence, but it frequently very nearly coincides with the planes of stratification or bedding—a feature which may account for the fact that slates which split thin enough, and have all the appearance of good roofing slates, are yet of not sufficient toughness to stand holing and trimming; the generality break during the operation. The colour of the sandstones, slates, and mudstones varies very much, sometimes within very short distances in the same beds. The sandstones at the surface show mostly different shades of grey, brown, and more rarely red; the slates and mudstones, shades of white, pale to dark grey, brown, pink, purple, blue, and more rarely black and red; varieties variegated, mottled, or finely banded in different colours are not uncommon. Admixed oxide of iron is no doubt the chief colouring matter of the vivid colours; for in depth beneath the water-level, where the iron exists as an impregnation in the state of finely-divided bi-sulphide, or iron pyrites, the prevailing colours are invariably dark-grey, blue, black, and more rarely green.

Similar variety and variation are also observable in the texture and hardness of these rocks, more especially the sandstones. These show all gradations from fine to coarse-grained and gritty, from soft and friable to very tough and hard. The prevalence amongst them of soft and argillaceous varieties is a noticeable, though unfavourable feature, as regards the probability of their yielding building stone of a permanently durable character, irrespective of another unfavourable quality, namely, of their being generally impregnated to a greater or less degree with soluble salts, which render them liable, on the faces exposed to the weather, to rapid exfoliation and decay.

It has been stated that the upper silurian series rest unconformably on the lower. This statement probably refers only to their lithological character, as the precise lines of junction of the two groups have not been so nearly ascertained as to enable it to be stated that they are stratigraphically unconformable. The upper silurian series, whilst also containing different typical forms of *graptolites* are in parts especially rich in genera and species of *brachiopoda*, *lamellibranchiata*, *crinoidea*, *trilobites*, *starfish*, etc., which ally the greater extent of the strata (according to Sir

Frederick McCoy) to the May Hill sandstone group, or the base of the upper silurian—some to the Wenlock-shale group. As shown on Mr. Selwyn's sketch-map of Victoria, they extend in great synclinal and anticlinal undulations, from a few miles west of Melbourne, eastward to the meridian of Wilson's Promontory. The striking differences in general lithological character and mode of stratification between the two series are noticeable in the facts, that rubbly or indurated and highly fractured argillaceous shales—rare or quite absent in the lower—are very abundant in the upper, and the beds of the latter strike but rarely meridional, and dip generally at low angles, from 20° to 40° being frequently observable. As regards building stones, roofing slates, flagstones, etc., their scarcity in this series is still more conspicuous than in the lower silurian. Limestones of excellent quality occur at Lilydale,* Waratah Bay,* and near the Tyers River in Gippsland. Bands of nearly white, somewhat slaty, saccharoidal marble and grey sub-crystalline limestones occur interbedded with the slates at Limestone Creek, head of the Murray; unfortunately they are full of thin yellow seams which deteriorate their commercial value. Several masses of encrinital limestone* occur in the valley of the Thomson River in Gippsland, and one near the Delatite River five miles westerly from Mansfield. A striking similarity of lithological character exists between these, and, though far apart, they are in the same belt of rock-bands. On examination it was found that they are in reality portions of lenticular shaped beds of limestones, of limited extent, intercalated with the ordinary upper silurian rocks. These deposits were probably formed by colonies of marine organisms occupying limited portions of the sea-bed during the deposition of the upper silurian rocks, and being subsequently covered, indurated, and folded with the rest of the silurian rocks.

With regard to its mineral capabilities, the silurian, as a whole, is the most important rock formation to the gold miner, on account of its containing the matrix of the gold in the countless number of veins, lodes, or reefs of quartz that traverse it. These reefs vary from less than 1 inch to above 100 feet in thickness, whilst their longitudinal extent ranges from less than 100 feet to several miles. Their mean strike is, in the lower silurian series, generally conformable to that of the strata; reefs that cross the latter being very scarce (Taradale and Stawell are the chief localities where cross reefs occur—

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* See specimens resting against W. end wall of Gallery.

one at the latter place being celebrated for its richness in gold). In the upper silurian there are more exceptions to this rule; and it must also be remarked that this series is not by far as rich in genuine quartz reefs, and those found—though in the average, perhaps, richer in gold per ton of stone—are not as thick and persistent as those of the lower series. The greater amount of quartz-gold produced by upper silurian districts comes from irregular blocks and veins that traverse or are closely associated with dykes of diorite-greenstone, as mentioned in the description of this rock. Regarding the dip or underlay of the reefs, it varies at all angles between nearly horizontal and vertical, and in most cases not only coincides with the direction of dip of the strata, *i.e.*, either east or westward, but its angle is often so nearly identical with that of the latter as to impart to the reefs the appearance of interstratified deposits. If it were not for the frequency of lateral branches—" leaders "—joining the main bodies at all angles, both at their hanging and foot walls, they would in reality have to be considered as " layers " or interbedded deposits; but, as it is, they represent in these cases so-called " layer—or bedded lodes."

Another feature of importance is that many reefs show from the surface downwards an endlong dip, or a dip in strike either north or southward, sometimes in both directions, whence follow an expansion in depth. The so-called " block reefs " in longitudinal extent show frequent contractions, and in horizontal section seem to consist of a series of lenticular-shaped blocks, frequently of considerable thickness in the centre, and connected at longer or shorter distances by either thin veins of quartz or only ferruginous clay-casings. Each block dips at a certain angle, rarely at right angles, either north or south of the line of strike, and as a rule the blocks of each reef, and of all the reefs in a district, show the same direction of dip, northward being the most frequent. The expression often used by our miners, "that it requires a shaft of a certain depth, either north or south of an outcrop, to strike the 'cap' of a reef," refers to this feature, and will thus be easily understood. Some of these blocks show one well-defined wall, but on the other they break up into a number of spurs, which usually cut out at short distances in the country rock. A peculiar and interesting occurrence are the so-called " saddle reefs " as especially well exemplified in Bendigo. Mr. E. J. Dunn describes* these reefs as follows:—"These are bodies of quartz of lenticular form that are bent over the axial lines, both anticlinal and synclinal, but only to a moderate extent are they found along the synclinals. On the course of the anticlinal axes they are largely developed, the superficial transverse section of the reefs over 'centre country'* often amounting to 400 or more superficial feet. They extend continuously along the axes for miles, thickening out or diminishing in size as they are traced along; they occur conformably with the bedding in a general way, and have the same beds bounding them for great distances; they 'pitch'† with the pitch of the strata, and they also 'dip' with the strata, though the continuation of the quartz with the 'dip' is not so extended as with the 'pitch.' The extensions east and west of the 'centre country' of the quartz downwards from the saddle-reefs are known as 'legs.' The legs often thin out rapidly in the form of a wedge; in some cases they extend to a depth of 300 feet or more below the 'saddle-reefs,' as in the North Johnson's mine, etc., but as a rule they seldom exceed 100 feet in depth below the cap of the 'saddle-reef.' The joint between the beds or 'back' often continues well defined for considerable distances beyond where the quartz ceases; such joints are commonly known as 'channels.' The 'legs' are seldom more than 3 feet to 4 feet across. Like the 'saddle-reefs,' of which they form a part, they frequently extend for very considerable distances with the strike of the rocks; they are conformable to the strata, lying between the bedding planes. The 'legs' are simply the thinner continuation of the quartz downward from the 'saddle-reef.' Most are on the east side of 'centre country.' These 'saddle-reefs' are notable for recurring in depths one below the other. In the Lazarus there are no less than 24 of these reefs from the surface to the 2,200 feet level, 13 of which are profitably auriferous." The mode of occurrence of the gold in reefs can be brought under the following main heads:—

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* Report on the Bendigo Gold-field.

1. The metal is equally distributed throughout the whole thickness and extent of the reef. This seems to be the rarest occurrence. Generally richer and poorer places alternate, especially where the thickness of the reef changes, the contracted portions being mostly richer than the wider ones; but the contrary also being the case, in a marked manner in some reefs, no rule can be established in this respect.

2. It exists in irregular larger and smaller patches, both in

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* The anticlinal axis of country rock.

† Dip in strike.

strike and dip, throughout the reef. More frequent than the former.

3. It occurs most frequently in so-called "shoots," *i.e.*, in stripe or band-like areas or portions of the reef of various widths, which dip at various angles, either north or southward in strike; rarely at right angles to the latter. Both the width and angle of dip of the shoots usually vary but little in each individual case, thus allowing tolerably accurate calculations to be made as to the depth at which a shaft, for instance, situated some distance from its outcrop, ought to strike such a shoot in the direction of its dip.

4. A not uncommon case, especially in strong reefs, is that the auriferous portions, either irregular patches or shoots, occupy only a certain width along the hanging or foot walls, more rarely along both walls, whilst the remainder of the reef is barren. Some exceptional cases have also been observed, however, of the gold being confined to a certain width in the centre of strong reefs, the quartz along both walls proving worthless. Most of these occurrences form structural features of the respective reefs, inasmuch as the gold-bearing portions represent separate bands, divided by thin black casings from the rest.

Touching the depth to which the gold extends in our reefs, the hypothesis advanced by high authority in the early days of the goldfields, namely, "that the metal would be found to quickly decrease in quantity, and entirely to disappear at a limited depth," has, fortunately for the prosperity of our quartz-mining industry, proved in the main incorrect. It would now seem as if some of our auriferous reefs exist to unlimited depths in the silurian strata, and that the limit to mining will be reached, when the increased cost and difficulty in working to great depths, render the mines unprofitable. That the quartz becomes, in the average, poorer in gold with increasing depth from the surface seems, however, to be the case in a great number of our deep mines, though exceptions of an actual improvement are not wanting.* In fact, in many deep mines, profitable working is at present only carried on by great economy and improvements in the system of mining and the machinery, especially that for crushing the quartz, combined with the gold-saving appliances; and last, though not least, by the saving and treatment of the auriferous pyrites—iron, arsenical, and magnetic pyrites—ores which generally appear at or beneath the water level, and seem to increase in quantity in depth, whilst the free gold gradually decreases.

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* Bendigo for instance.

Except in gold, the silurian rocks, as far as experience goes, are strikingly poor in ore-deposits of other metals. Of silver there are only a few occurrences known—comparatively poor impregnations—in several auriferous quartz reefs at St. Arnaud, the ore consisting of *chlorobromide* above, and probably of *sulphide*, or *sulph-arsenide of silver* beneath the water-level. Copper occurs impregnated in many quartz reefs in the form of *copper pyrites*, and also as *native copper* at Lothair, Clunes, etc., but too scantily to be of any value. Only one massive lode of this ore, near the surface partly converted into *oxide*, *carbonates*, and *native copper*, has as yet been discovered in upper silurian rocks in the valley of the Thomson River, Gippsland. This lode, which is from 4 to 8 feet thick, stands in immediate connection with a diorite-dyke, and having by trial yielded from 12 to 18 per cent. of copper in the average, it ought to prove profitable to work, though its position in the midst of a steeply mountainous district renders carriage very expensive. Lead has not as yet been found in special deposits, but occurs as *galena* in most auriferous quartz reefs. Its presence is considered a favourable sign for gold. Iron, in the form of *micaceous* and *brown iron-ore*, principally the latter, abounds in irregular patches and impregnations; but regular strong deposits worth working are, up to the present, not known in these rocks. The only metal, next to gold, found in quantity to be of commercial value is *antimony*. This occurs as *grey sulphide*, mostly converted into *oxide* near the surface, in strong veins and larger and smaller pockets, partly and more frequently associated with auriferous quartz reefs (Heathcote, Whroo and Ringwood); the upper silurian rocks having hitherto proved the most prolific.

UPPER PALÆOZOIC ROCKS.

DEVONIAN, CARBONIFEROUS, AND PERMIAN.

The specimens placed under this head are collected from strata that occur in widely-separated, more or less isolated patches of larger and smaller area, over a range of country extending from the Glenelg near the west, to the Snowy River[*] near the east boundary of the colony. From Mr. Selwyn's observations,[†] to whom the above classification is due, we learn as follows:—"The grouping of the several patches of strata as 'upper palæozoic' must be considered to a certain extent as provisional, as, though some are certainly referable to that period, others may have eventually to be classed as 'lower mesozoic.' So much is certain, that they are intermediate in age between the upper silurian on the one hand and the mesozoic 'carbonaceous' or coal-bearing rocks on the other, which latter almost certainly rest on them under the greater part of the Gippsland plains from Hayfield and Mewburn Park to Rosedale, Sale, Stratford, Lake Wellington, etc. They are chiefly developed to the westward in the Grampians, and in the Sierra or Victoria and Dundas Ranges, and to the eastward in a country extending from a little north of Port Albert through Ben Cruachan and Mount Wellington, whence they probably also extend in outlying patches across the Great Dividing Range to the valley of the Devil's River. Other smaller patches or 'outliers' occur throughout the intervening central portion of the colony—at Bacchus Marsh and Ballan; on the eastern part of the Mount Macedon Ranges; on the Coliban, near Kyneton; on the Wild Duck Creek, near Heathcote; and on tributaries of the Upper Goulburn, near Mansfield; also at Mount Tambo, on the head waters of the Mitta Mitta.

The lithological character of the different beds, and the general physical aspect and prevailing colour of the formation, bear a very close resemblance to those of the lower carboniferous and Devonian formations of Britain. In the western part of the colony a thickness of upwards of 2,000 feet is exposed to the precipitous escarpments of the Grampians, Mount Sturgeon, Mount Abrupt, and the eastern face of the Victorian Ranges. The lithological character of the series, as exhibited in the Grampians, is strictly arenaceous—massive thick-bedded sandstones with bands of sandy flags, but no slaty or shaly beds. Considerable variations occur in texture and composition, from very hard siliceous grit and quartz rocks, with included pebbles of white quartz (as at Mount Talbot, Mount Arapiles, and the Black Range), to hard and soft, fine-grained freestones. The prevailing colours are shades of whitish-brown, reddish-brown, and white; rarely brick-red. Much cross stratification or false-bedding is observable; but the whole formation has a general westerly dip, at rather low angles, giving a gentle slope to the faces of the hills in that direction, whilst to the eastward the beds terminate abruptly in bold rocky escarpments, and almost vertical cliffs, several hundred feet in height. In the Dundas and Black Ranges the dip of the beds is reversed, or to the eastward, indicating a synclinal axis between those hills and the Grampians, Sierra, and Victoria Ranges. In some places the beds are seen to rest directly on granite, whilst in others they rest on the upturned and denuded edges of the silurian strata. At Mount Sturgeon, the southern end of the Grampians, several quarries have been opened, from which 'freestone' of excellent quality can be obtained in unlimited quantity. The cost of transport, however, from such a remote district, prevents its use in Melbourne, although in many respects it is perhaps the best freestone yet found in Victoria. At one time, large quantities of stone were raised from similar beds about twenty-five miles west of Melbourne, near Bacchus Marsh,[*] and used in the construction of several public buildings in Melbourne; but various reasons prevented its further use. (*See* note to specimen No. 21.8.) In several of the localities above enumerated, thick masses of conglomerate are associated with the sandstone. They occur generally towards the base of the series, and are composed of a very irregular aggregation of rounded pebbles, and occasionally angular, or sub-angular, fragments of all sizes of granite, greenstone (diorite), various porphyrites, hard slates, gritty sandstone, grey quartz rock, and quartz. These pebbles or fragments are imbedded either in a soft, sometimes earthy, mass, showing little or no trace of stratification, as at Darley, near Bacchus Marsh; or are interspersed in a thinly-stratified sandy shale, as at the point where the road from Bendigo to Lancefield crosses the Wild Duck Creek. (*See* specimen 15.1.) They more commonly occur in hard cemented masses,* as on the Mount Macedon 'conglomerate range;' in the valley of the Howqua, near Mansfield; at Ben Cruachan and the Avon River Ranges, Gippsland; on the Macalister, near Mewburn Park and Mount Tambo. From Mount Macedon eastwards, and especially near Mansfield and in the Gippsland localities, greater variations in the general character, colour, and composition of the beds occur than is observed in the more western outcrops; and I am inclined to think that the Bacchus Marsh, Ballan, and Grampian beds are newer than any we have in the eastern districts. A few extracts from notes made at some of the localities named will afford the best idea of their general character:—Mount Tambo, about 3,800 feet above the sea, shows thick masses of purple quartzose grit, coarse conglomerate, and soft, fine-grained, yellowish, micaceous shales, with numerous indistinct impressions of plants; dip south 15° west at 50° to 60°. The base of Mount Tambo, on the north side, consists of gneissose schist and feldspar porphyry. At the Avon River, above junction of Valentia Creek, we find yellow and brownish-red, coarse-grained sandstones, and micaceous freestones with numerous impressions of plants. Very good specimens of *lepidodendron* are found here; also other vegetable impressions not sufficiently distinct to be determined. These plant beds are underlaid in this locality by a great thickness of purple-red, rubbly, and nodular shales, interstratified with hard, fine-grained, purple-red or light claret-coloured sandstones. The faces of the sandy beds are almost always covered with mica in large scales. Near Mansfield, to the north-west, at Mount Battery, precisely similar beds with impressions of plants occur, also underlaid, as on the Avon, by thick beds of coarse conglomerate. The average dip of the beds is generally under 30°, and in some places, as at Iguana and Moitun Creeks, where they are exposed in cliffs 250 to 300 feet in height, they are quite horizontal. On the Freestone Creek, near Busby Park, whitish-brown freestone, with purple and dark-blue and brown micaceous shales, were observed; and, associated with them, greenish-coloured rubbly, calcareous bands, closely resembling the 'cornstones' of the old red sandstone series, to which also the whole formation bears a striking resemblance. With the exception of traces of copper in the shales on the Devil's River, near Mansfield, and of thin veins of micaceous iron-ore in the sandstones of the Grampians, no minerals of economic value have as yet been found in any part of the series of these rocks; neither do they present indications of quartz reefs or other mineral lodes. The occurrence of gold in the conglomerates derived from the quartz-veins of the silurian rocks on which they are deposited is an interesting and still undetermined question. Several analyses have been made of quartz taken from the conglomerates—in one instance from a place on the Werribee, where the quartz had clearly been derived from the denuded surface of a silurian quartz-vein; but neither in this, nor in any other instance, was even a trace of gold detected, and, as might be expected, no alluvial or other gold deposits have been discovered within any area of Victoria exclusively occupied by these rocks. Mount Tambo, Avon River (Gippsland), Mansfield, and Bacchus Marsh are the only localities where fossil plants have yet been found, and in two only of these, viz., Avon River and Bacchus Marsh, are the specimens sufficiently perfect to be clearly identified; from the former *lepidodendron*, and from the latter *cyclopteris*[*] or *gangamopteris longifolius* (McCoy), the former certainly palæozoic, the latter probably triassic or lower mesozoic. No fossils of any kind have been found in the Grampian beds, and not a trace of fossil animals in any part of the arenaceous and argillaceous parts of the series. This apparent scarcity of fossils may, however, in a great measure be due to the hitherto but cursory and partial examination these strata have been subjected to. The position in the series of the upper palæozoic fossiliferous limestone, which occurs in isolated patches—for instance, at Buchan (where it contains galena deposits), Bindi, etc., in eastern Gippsland—has not been satisfactorily determined. The small patch near Bindi would, however, appear to be above the plant-bearing sandstones and conglomerates of Mount Tambo, and, if so, would indicate that the latter are

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[*] "Mr. A. W. Howitt regards the Snowy River porphyries as a great volcanic sheet, resting on a lower palæozoic foundation; and being probably of lower devonian age."

[†] "Notes on the Physical Geography, Geology, and Mineralogy of Victoria."—Intercolonial Exhibition Essays, 1866.

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[*] The Bacchus Marsh sandstones, described provisionally under the head of "upper palæozoic rocks," must now be considered of triassic or lower mesozoic age, owing to further discoveries of palæontological evidence. In regard to the masses of conglomerates associated with the sandstone beds at the above locality, at Wild Duck Creek, and elsewhere, Mr. Selwyn describes the arrangement and character of the materials as being suggestive of a marine glacial action, although, he remarks, no grooved or ice-scratched pebbles had been found. However, these have now been found in abundance, also erratics, some being of considerable size, and patches of striated bed-rock, all of which prove indisputably the glacial origin of the beds. The indiscriminate arrangement of the materials forming the conglomerate would suggest their origin being due to deposition from the breaking up or melting of icebergs, in some sea or lake. It is quite possible that the Wild Duck Creek conglomerates may be of the same age as those near Bacchus Marsh. but in the absence of palæontological evidence they have been provisionally referred to the Upper Palæozoic series. Although gold may exist in them, owing to the nature of their origin, it is not probable that it will do so in payable quantities. When worked for that metal at Reid's Creek, Woolshed Creek, and El Dorado, they yielded beautiful pebbles of agate, jasper, etc., besides many species of gem stones (including diamonds). Some other localities may be mentioned—Wahgunyah, Rutherglen, the Springs, Wooragee, Tarrawingee. Baddaginnie, about four miles east of Gordons, near Egerton, etc. See specimens of conglomerate, Nos. 15.1, 15.2, 15.3, 15.4, 15.5; sandstones, 20.1, 20.2, 21.8.

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* These conglomerates must not be confused with those of undoubted glacial origin mentioned in note on page 80.

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[*] Determined *gangamopteris* of triassic or lower mesozoic age. The following have also been identified:—*G. angustifolia* (McCoy); *G. spatulata* (McCoy); *G. obliqua* McCoy).

older than the true European palæozoic coal-measures, which, so far as is known at present, do not exist in Victoria."

SECONDARY OR MESOZOIC ROCKS.

In the Intercolonial Exhibition Essay of 1866, and some of his reports, Mr. Selwyn makes the following observations about these rocks :—

"They extend over an area of close upon 4,000 square miles in three distinct and separate districts, viz.:—

	Miles.
Western Port to Cape Patterson, Welshpool, and the La Trobe River, near Traralgon	1,751
The Gellibrand River and Cape Otway to the Barrabool Hills and Indented Heads	1,882
The junction of the Wannon and Glenelg Rivers, and neighbourhood of Casterton, Digby, Merino, and Coleraine...	349

They include all the known coal-bearing rocks of Victoria, and it is probable that these extend eastward, under a great part of the Gippsland plains, south of a line drawn from near Hayfield to Lake Wellington, but cannot be seen on the surface, on account of being thickly overlaid, as at Bellarine and Queenscliff, by tertiary rocks and recent alluvial deposits. Their thickness seems to be at least 5,000 feet. Very few sections have as yet been found that show clearly the relation of this 'carbonaceous formation to the older strata on which it rests. In a few instances it is clearly seen to have been deposited on granite, the detritus of which, not much waterworn, enters largely into the composition of some of the beds. In one case, in the valley of the La Trobe River, near Traralgon, it is found resting on the upturned edges of the auriferous silurian rocks, and the lower beds of the 'carbonaceous' formation consist of thick masses of brecciated agglomerate of small angular fragments of rock, apparently derived from the subjacent silurian strata. A great similarity in general mineral and lithological character obtains throughout these rocks in the several districts. Alternating masses of hard and soft, thick-bedded sandstones and argillaceous shales occur in all parts of the series, and occasionally thin bands of hard, grey or brown calcareous rock are met with ; but there are no distinctive or characteristic groups of beds that would render their co-ordination possible in widely-separated localities. The prevailing colour of the strata, especially of the sandy beds, is a dull greenish-grey, occasionally passing into brown. The shales are commonly dark grey, or almost black. Not unfrequently portions of large branches or trunks of trees are met with, horizontally embedded. The formation does not, apparently, contain any metallic minerals, except iron, in the form of concretionary nodules of clay iron-ore (carbonate of iron) and brown hematite, but these have not, as yet, been found in sufficient quantity to be economically valuable. Iron pyrites occurs also, often strongly impregnated, generally in the black shales, and it is an interesting fact that a sample of such pyrites assayed at the Geological Survey laboratory yielded at the rate of 6 dwts. 18 grs. of gold per ton. Calcite is met with both in veins and as thin coatings on the faces of the joints. The average dip of the beds does not exceed 20°, and they are often horizontal over considerable areas. In the vicinity of Geelong the sandstone has been extensively quarried and used in the construction of most of the larger public and private buildings in that city. Like the upper palæozoic* freestones from Bacchus Marsh, these also are found to be locally much impregnated with saline matter, which, on exposure to the weather, effloresces on the surface of the stone, causing rapid exfoliation and decay. The character of the strata generally indicates that they have been formed in shallow water, under the influence of strong and constantly varying currents, giving rise to much diagonal and wedge-shaped stratification or 'false' bedding. The general lithological character of the Cape Patterson beds, for instance, may be gleaned from the following brief description (report of December, 1853):—They consist of a series of thick-bedded, rather soft, coarse, and fine-grained, very feldspathic sandstones, grits and brecciated conglomerates, of various shades of brown, yellow, and greenish-grey, dependent on the state of oxidation of the iron forming the colouring matter. These beds are apparently formed from the detritus of granite and trappean rocks, and often contain fragments of feldspar crystals. The weathered faces of the beds present everywhere a network of veins composed of hard, sandy ironstone, or carbonate of lime, as well as numerous large and small ferruginous, sandy nodules and concretions. These veins and nodules, being much harder than the surrounding rock, have resisted the denuding action of the atmosphere and the waves, and are now left standing out in all directions, giving the beds a very rough, uneven and fractured appearance. In the Cape Otway District the strata show very similar characters, according to Mr. Charles Wilkinson's report of 1866. The only fossil animal yet discovered in any part of the Victorian 'carbonaceous' rocks is a species of *Unio*[*] (named *Unio Dacombii* by Professor McCoy), found in 1859, whilst sinking for coal, in the Wannon District. Specimens of *Sphenopteris*, *Pecopteris*, *Zamites*, and *Tæniopteris*, are found in the same beds, as also in all the other districts in which the coal-rocks occur. *Sphenopteris* and *Tæniopteris Daintreei* are, according to Mr. Charles Wilkinson, especially abundant in the Cape Otway District. The physical character of the country in which the mesozoic carbonaceous rocks occur is very varied. In some areas there are densely timbered hills and valleys; in others, fine undulating downs, clothed with rich grass, and scarcely any timber; or low flat country, covered with varieties of coarse grass, heather, grass-tree, stunted gums, and clumps and patches of gum-scrub. This latter character is, however, due to the presence of overlying newer tertiary deposits, that commonly form a poor sandy soil. Where they are not so overlaid, the soil is generally deep and exceedingly fertile, as on the Barrabool Hills, in the valley of the Wannon, and in parts of the Western Port and Cape Otway Ranges. As timber-producing districts, and in variety of vegetation, the two last-named are probably unsurpassed by any in the colony.

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* Mesozoic.

In all the areas occupied by this formation, seams of coal have been found, but they are apparently not confined to any particular part of the series. The quality of the coal varies greatly. Ordinary brown coal, bright jet coal, that will not soil the fingers, and good bituminous coal have all been observed." Coal seams are being worked near Korrumburra, at Hazlewood in the Moe District, near Mirboo, Boolara, Traralgon, etc., some of which afford coal of good quality and well adapted for steaming purposes, and now used on the Victorian railways. Their thickness ranges from a few inches to probably at the most 4½ feet, and in many instances they are only of limited extent.

As an interesting and valuable result of prospecting in the carbonaceous district south of the Moe, Gippsland, may be mentioned the discovery at Stockyard Creek of richly auriferous drift and quartz reefs, in a small irregular area of silurian rocks, exposed within the carbonaceous formation, in which latter small seams of coal occur in close neighbourhood to the gold workings.

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[*] Another species found *Unio Murrayi* (McCoy).

The following are the analyses of some of the Gippsland coals* by Mr. J. Cosmo Newbery :—

	Water.	Volatile matter.	Fixed carbon.	Ash.
Coal Creek	8·80	25·53	60·22	5·45
Jumbunna	5·60	31·75	57·25	5·40
Jumbunna	3·14	31·485	61·425	3·95
Korumburra and Jetho ...	8·80	26·00	58·17	7·05
Coalville	4·10	35·45	54·40	6·05
North Coalville	4·10	31·50	58·15	6·25
Moe	6·60	29·40	52·05	11·95
Kilcunda	4·36	35·04	54·60	6·00
Coal Creek Extended ...	7·20	28·55	53·25	11·00
Strzelecki	3·80	27·58	60·05	8·57
Outtrim	4·30	39·70	51·45	4·55
Hazlewood	10·15	20·85	63·10	5·90
Boolara	4·56	35·215	53·25	6·975
Traralgon	9·35	19·675	61·65	9·325
Poowong	3·92	32·23	60·30	3·55
Trafalgar	13·2	26·8	54·4	5·6

ROCKS OF THE TERTIARY OR CAINOZOIC AND RECENT PERIOD.

The rock formations of the tertiary, including the recent period, whether regarded in their economical, physical, or geological aspects, occupy by far the most prominent place in Victorian geological history. Strata of sedimentary or volcanic origin, referable to some section of tertiary or recent time, occupy probably fully one-half, or over 40,000 square miles, of the surface of Victoria, forming deposits from a mere capping to over 300 feet thick. They are found resting unconformably on all the older formations, igneous and stratified, and range from sea-level to elevations of over 4,000 feet. They include groups of strata of earth, loam, sand, clay, gravel, conglomerate, breccia, ferruginous and calcareous sandstone and grit, hard quartz rocks, marble and other kinds of limestone, and various volcanic products, each of which has its more or less distinctive geological, palæontological, or mineral character, indicating it to be truly representative of the recognised eocene, miocene, pliocene, or pleistocene (including recent) deposits of Europe and other countries; the terms being applied here, however, simply to denote lower, middle, upper, and recent tertiaries, rather than exact synchronism with European beds, or any ascertained relative percentage of living and extinct forms in their fossil contents. The oldest beds, probably upper eocene, occur on the east shore of Port Phillip Bay, resting on granite and mesozoic carbonaceous rocks. Very fine collections of fossils, now in the National Museum, have been procured from them. The beds are chiefly composed of blue clays and marls, with septarian-limestone nodules and selenite, and generally closely resemble the eocene strata of the Hampshire and London basins. The miocene division is chiefly represented in the marine tertiaries, extending from the western boundary of the colony to the east shore of Port Phillip Bay, being well exposed in the coast cliffs and river banks, and occurring sometimes, as at the Muddy Creek, near Hamilton, upwards of forty miles inland. Its upper subdivisions also occupy a long, narrow strip of coast country, nowhere, however, exceeding sixteen miles in width, between Wilson's Promontory and Cape Howe, and form cliffs, on the northern shores of the Gippsland Lakes, and on some of the rivers flowing into them. From the mouth of Spring Creek to the Bird Rock, fourteen miles south of Geelong, they are exposed in the fine cliff sections, reaching a thickness of 260 feet, the sequence of the beds being as follows :—

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* See specimens in wall cases Nos. 202 and 203 on ground floor north wall.

Upper Miocene.

80 feet : Hard, thin-bedded, sandy limestone (the calcareous portion consisting almost entirely of fossils), the probable equivalent of the Mount Gambier series, described by the Rev. Julian Woods.

Middle Miocene.

80 feet : Soft, brown, sandy clay.
30 feet : Brown, blue, and yellow sandy clays, containing abundance of gypsum.
1 foot : Very hard crystalline sandstone.
5 feet : Brown sandstone, containing abundance of gypsum.
10 feet : Blue marl, containing septaria, gypsum, and iron pyrites.
8 feet : Friable thin sandstone, with thin bands of gypsum.

Lower Miocene.

1 foot : Very hard band of crystalline sandstone.
17 feet : Soft brown sandstone, with thin bands of harder material.
20 feet : Thin-bedded brown sandstone.
8 feet : Blue and grey friable sandstone.

Clearly antecedent in date to the upper and middle miocene are the so-called "lower drifts"—occurring near Steiglitz, at the Golden River, Tea-Tree Creek, the Upper Moorabool, Parwan Creek, Bacchus Marsh, and Ballan—which, though in many respects quite similar in character to the real older gold-drift, and in places actually forming the bottom or floor of it, have not as yet proved, nor are perhaps likely to prove, productive in gold.

The deposits of pliocene and recent age, both of marine and fresh-water origin, have a far wider surface-range than the older marine tertiary deposits; they cover these all along the eastern seaboard, and occupy also the vast extent of the Lower Murray Plains. But besides this what renders them the most important divisions of the period is the fact that they embrace the auriferous drifts, the determination of whose payable range is a matter of the utmost consequence as affecting the probable extent and productiveness of the goldfields. During the progress of the geological survey it was clearly established that there are at least three distinct periods of deposition; the earliest not older than pliocene, whilst the newest is probably due to causes still in operation. In absence of satisfactory palæontological evidence, these three drift-deposits have provisionally been classed as older pliocene, newer pliocene, and post-pliocene, including recent; or as lower, middle, and upper gold-drifts. The mode of relation of these three drifts in some of our most important goldfields to more or less extensive streams of newer basalt-lava would seem to afford a ready means of distinguishing at least between the first two (lower and middle) and the upper gold-drifts; for the former, being older than the lava, are covered by it, whilst the latter, being more recent, in places actually overlie the lava. However, besides this distinction being only of local application, there are also exceptions to the above relations in the neighbourhood of basaltic craters and points of eruption that were more recently active—for instance, at Mounts Franklin, Buninyong, Warrenheip, etc. Though most of the lava-flows discharged from these volcanic vents (the latter show at least four flows) are no doubt older than the upper gold-drift; still some are certainly more recent, as they have been poured into valleys filled with this drift. A fine instance of this is exhibited at Yandoit, near Mount Franklin. Although associated basaltic flows do not therefore in all cases present a sure guide for identifying any of the three drifts, each of the latter can, however, be easily recognised by special characteristics of its mass, relative position, and other circumstances, as the following description will show :—

I. THE OLDER PLIOCENE, OR LOWER GOLD-DRIFT.

The special character of this drift is that its gravelly portion is principally composed of quartz pebbles or boulders, which, as well as the gold contained in it, are perfectly rounded or water-worn. Although it is in some places—as, for instance, in the White Hills at Bendigo, the Loddon valley hills, etc.—well arranged according to size— *i.e.*, from small to large, from the top downward—still it is more frequently observed that though the coarsest—the real boulder-drift—lies at the bottom, the superincumbent portion is variously composed in different localities. In our western goldfields—Ballarat, Castlemaine, Avoca, etc.—it consists of layers of sand and clay, of sandy and clayey, coarse and fine gravel, and where filling deep valleys and carrying the present surface drainage channels, beds of real drift-sand are not unfrequent. In the large deposits of this drift discovered on the Tangil River, Gippsland, the pebble drift, or rounded quartz-gravel, is only a few feet thick, but covered in places by over 100 feet in thickness of an indurated, yellow or brown, very arenaceous clay, which so closely resembles the soft, yellow, silurian sandstone—the rock-bottom of the district—that, except for its horizontal bedding, and the absence in it of small quartz-veins that are always present in the true bottom-rock, it might be easily mistaken for the latter.

The predominating colours of this drift are either white or brown, or white and brown mottled, whilst the bottom layer or washdirt is often rich in a black carbonaceous clay, or shows a covering of this clay, in which remnants of trees—as branches, roots, trunks, leaves, seedvessels, etc., all more or less carbonised, or sometimes wholly or partially converted into iron pyrites—are often found enclosed. In some places beds of real lignite, or brown coal, have also been found above the washdirt. Layers of hard ferruginous conglomerate (*see* specimens in the collection), from a few inches to several feet in thickness, and requiring blasting operations in working, are hardly ever absent, especially near the bottom of the deposit, and a peculiar, extremely hard and dense siliceous cement—a real quartzite—is sometimes observed in cakes near and at the top along basalt escarpments, or where the drift deposit is exposed near basalt-flows. The fact that these cement cakes, which are often many feet thick, do not extend beneath the basalt, but occur only where the drift was exposed to the atmosphere through denudation of the basalt, would tend to indicate that they are the products of local metamorphism of sandy clay or sand, in which siliceous waters, produced through the denudation of the basalt, in connection with atmospheric agencies, performed important parts. Touching the mode of occurrence of the drift it is twofold:—

(*a*) *As Hills*, either solitary or in series, more or less connected, bounding gullies and flats, or more rarely rising in the centre of flats—as, for instance, the White Hills, Maryborough, a hill in the Loddon River flat below Guildford, etc. Where these hills are covered by basalt, they are generally far larger than where exposed, owing to the protection against denudation afforded by this rock: the mode of occurrence of the drift as hills is plainly a result of denudation, the deposit having once filled old valleys. The rock-bottom of these hills lies, in the higher parts of the goldfields, generally high above the surface of the flats and gullies; but it is frequently the case that, towards the lower parts, it gradually sinks lower and lower, and not only disappears beneath the surface of the flats, but runs at last actually far lower than the rock-bottom of the latter, thereby proving conclusively that the old valleys had a steeper fall than the present ones. As regards the character of their mass, hills nearly always contain strong layers of conglomerate, whilst soft clay and sand-beds are less common.

(b) As so-called Deep Leads.—In this case the drift fills deep valleys and channels, which carry the present surface drainage, a mode of occurrence well exemplified at Ballarat, Bagshot, near Bendigo, Eldorado, Beechworth, etc. The term "lead" was originally intended only for the continuous run of paying washing-stuff, occupying mostly the deepest part of the channel, the so-called "gutter;" but it is now generally applied not only to the whole extent of this kind of deposit and to series of connected hills, but also to similar hills and drift channels of the newer pliocene next to be considered. As will have been gleaned from the description of the hill deposits, the genuine older pliocene deep leads are continuations of the latter, and, to attach a stricter meaning geologically to the term "deep lead," they ought to be considered to commence where the top of the deposit becomes level with the adjoining flats or gullies, whilst its rock-bottom runs at a lower level than that of the latter, or, where the deposit enters the flats, and becomes overlaid by more recent gold drifts. The deep leads are divided into main-trunk leads, main-leads, main-branch leads, branch leads, according to their topographical relations to each other. At Ballarat, for instance, several strong basaltic flows cover extensive old watersheds, comprising a great number of branch

leads, joining main-branch leads, which unite to several main leads, and these ultimately to the main-trunk leads. The line of drainage of the deep leads does not generally agree with that of the present surface, and is in some cases quite the reverse of it. A fine instance of this is observable close to Malmsbury. There the old Belltopper lead runs across the present Back Creek, and joins the old Coliban River lead close to the township, not far from the point where the old Taradale leads also join the old river lead; the latter runs from there right across the present Coliban River valley in the direction of the valley of the River Campaspe. This peculiar relation is easily understood from the geological features of the district; namely, whilst the extensive basaltic stream that covers the drift of the old valleys appears at gradually increasing heights above the present Coliban river-bed in the upper part of its course, below Malmsbury it forms the bed of the river itself, which consequently proves that the drift must lie at a considerable depth beneath the river. But as there is no evidence lower down the river of any such deep outlet, and as the Taradale leads run south, whilst it runs north, the only conclusion we can come to is that the old river channel—the main lead—trends easterly towards the Green Hill, in which direction it must join the old valley of the Campaspe River.

The discovery of the payably auriferous portions of deep leads, gutter or rise, as the case may be, is, especially in wide extensive valleys covered by basalt, a matter of great difficulty and expense, and can only be accomplished in an economic manner by systematic boring operations, as already introduced at many of our goldfields. By these means a number of leads were discovered, some of which have since proved most profitable, and the auriferous character of a large area of ground has been demonstrated.

II. THE NEWER PLIOCENE, OR MIDDLE GOLD-DRIFT.

This drift is generally not so extensively developed as the other gold-drifts, though it is doubtful whether what are on some goldfields considered as the older deep leads may not, in reality, belong to it as regards geological age, a point to be noticed further on. It occurs, like the older gold-drift, both as hills and deep leads, and its connections with that drift are very various. For instance, where both drifts occur as hills, the older drift lies sometimes considerably higher—as, for instance, at Fryer's Creek, Sailor's Flat, near Vaughan, etc.; or, as at

Forest Creek and Barker's Creek, they lie side by side, either quite separate or the younger overlapping the older; or, as at Maldon, where the middle drift covers the older. At some goldfields the older drift forms hills alongside of or within flats that contain channels or leads of the middle gold-drift, covered by the upper gold-drift—for instance, at Talbot, Maryborough, Sandy Creek, near Maldon, etc. The rarest case is of both drifts occurring as deep leads in flats, the older drift resting on the bottom, being overlaid by the middle drift, and this again covered by the upper gold-drift. An instance of this exists in the lower part of Sandy Creek flat, near Newstead.

Touching the character of its mass, the middle gold-drift differs from the older drift by the imperfectly rounded state of its quartz-pebbles and gold-particles, by a considerable admixture of silurian rock-pebbles and by striking colours, such as red, blue, green, yellow, etc., often all shades. Its mode of arrangement from top to bottom is rarely as perfect according to size as in the case of the older drift. Where occurring as deep leads, it frequently contains layers of carbonaceous clay, full of fragments of wood and plant impressions; yet the wood is not nearly so carbonised as that of the older drift. So-called cement—or conglomerate—layers occur also frequently, more especially in hill deposits; their character is different, however, from that of the pudding-stone of the older drift, being more that of a "breccia," whilst the cementing medium is hardly ever hydrous oxide of iron (brown iron-ore) in a pure state, but generally consists of a small percentage of it permeated through silicate of alumina, *i.e.*, of indurated ferruginous clay. In some cases it is also calcareous, or consists of pure carbonate of lime, as, for instance, in some parts of the Sandy Creek lead, near Maldon.

As regards the supposition previously advanced, that some of the deep leads classed under the older drift might, as regards geological age, belong to this middle gold-drift, the deep lead of Epsom Flat, near Bendigo, and some of the Ballarat leads, may be instanced. The "White Hills" of the former locality belong undoubtedly to the older drift, consisting nearly throughout—the seventh White Hill, for example—of above 60 feet of more or less cemented, perfectly waterworn gravel, arranged tolerably well, according to size, from fine gravel at the top to large boulders at the bottom. On the northern base of this White Hill, the Epsom lead, covered by upper gold-drift, commences; but it contains only a few feet of cemented, rounded quartz gravel and boulder-drift at the bottom, the remainder consisting of white or variously-coloured arenaceous clay layers, which have no regular connection with the seventh White Hill gravel; whilst, moreover, the bottom of the lead lies considerably lower than that of the White Hill. Considering these features in connection with the occurrence of small patches of genuine older drift conglomerate on the rises bounding Epsom Flat, it seems very probable that the deep lead channel is, in its upper part at least, of later formation than the hills, having been washed out in an apparently wide expanse of the older drift, and partly filled with re-washed material of the latter. At Ballarat it was discovered that there exists a "high-rise" gravel along some of the deep gutters; the latter are mostly filled with clay and drift sand, with a few feet of boulder-wash at the bottom, evidently analogous features and relations to those just described between the White Hills and Epsom lead. Similar occurrences also probably obtain at other goldfields. The determination of the exact boundaries between the two drifts in cases like the Epsom Flat lead is quite impossible, on account of the never-absent covering of upper gold-drift and the great similarity in the material. This does not, however, affect the miner, for to him the distinction between the two drifts has little practical value.

III. THE POST-PLIOCENE, OR UPPER GOLD-DRIFT.

Under this head are comprised three different deposits, viz., (*a*) the *Alluvial-drift*, or simply "*Alluvial*," as the digger calls it; (*b*) *Recent River-drift;* and (*c*) *Surface.*

(*a*) *The Alluvial-drift.*—This fills every flat and gully throughout the goldfields, and is covered by soil and vegetation. It is generally composed of alternating layers of tough, brown or bluish clays, indurated, ferruginous sands, and clayey gravel; the latter is mostly coarsest at the bottom, representing the *washing-stuff*, and consists of a mixture of angular, or but very slightly rounded fragments and pebbles of quartz and all kinds of rocks, derived from the bounding rises and ranges of the flats and gullies. Sometimes it shows only one or two feet of tough, sandy, ferruginous clay at the top, and the remainder is formed throughout of clayey gravel, which only becomes somewhat coarser towards the bottom. Again, there are gullies showing from less than one foot to several feet of auriferous gravel at the bottom, covered by a far greater thickness of tough and sandy clays in alternating layers. As regards its thickness, it varies from a few feet to above sixty feet in different localities. In the lower parts of gullies and flats it is always the thickest, thinning out towards the commencement of the gullies in the ranges. The gold it contains is generally but little waterworn; rich deposits of waterworn gold only occur in those gullies which separate the older or the middle drifts into series of hills, and in a gravel composed of more rounded quartz and rock-pebbles, evidently the remnants of the denuded older drifts. Touching the position of this drift, if in contact with the older drifts, it covers them without exception where they form deep leads and no basalt intervenes. As in cases of this kind the probability of the existence of two payable washdirt-layers is given—namely, of one immediately resting on the older drift—the so-called "*false-bottom*;" of the other lying on the true rock-bottom—careful prospecting of the upper floor is highly advisable.

(b) Recent River-drift.—This drift, as the name implies, consists of the occasional, generally patchy, accumulations by floods of shingle, sand, and clay along the courses of creeks and rivers, and is but rarely payably auriferous. It rests on the creek and river banks upon the soil covering the upper gold-drift; and, if happening to escape denudation by recurring floods, it may in course of time become also covered by a thin layer of soil and vegetation. This explains what is not unfrequently found in some river flats (Coliban, Ovens, Loddon rivers, etc.), viz., of two or more shingly or sandy beds, with thin layers of old humus or former surface soil intervening, having to be sunk through before the genuine clayey alluvial gold-drift is reached. To this recent drift also belongs the shingly material occupying the old water-courses that generally traverse most flats and wide gullies. Filling these old channels in most cases level with their banks, and covered by soil and vegetation, this drift is seldom recognisable at the surface; and as it sometimes extends right down to the rock bottom, the miner working a claim on it has but a poor prospect for gold, though claims close adjoining, outside the old water-course, may prove very rich. In deposits of this drift, broken and perfect shells of the common *unio* are frequently found, and also trunks and other remnants of trees of the kinds lining the banks of the rivers and watercourses.

(c) Surface.—This deposit, which derives its name from its occurrence right at the top of the ground, is the most far-spread of our gold-drifts. Being a result of the disintegration of the silurian rocks *in situ*, and, owing to the general softness of the

latter, it covers nearly every hill and range of these rocks, though being—with one exception to be mentioned further on—only payably auriferous in the neighbourhood of auriferous quartz reefs. Its thickness varies from a few inches to above one or two feet, according to the less or more decomposable nature of the underlying rocks; and it consists generally of clayey and sandy matter, mixed with angular fragments of quartz, sandstone, and slate, and carrying some humus supporting vegetation. The gold it contains is quite angular, hackly or crystalline, and is derived from auriferous quartz reefs or leaders existing in the immediate vicinity. For this reason it affords, by prospecting and washing, the best guide in the search for such reefs. Whilst the auriferous character of the older and newer pliocene drifts offers only a general certainty of the existence of gold-bearing reefs in a district, gullies filled with auriferous alluvial, especially their upper portions, afford undoubted proof that auriferous reefs occur in the neighbouring hills and ranges; but only the prospecting of the surface on the slopes of these hills and ranges will in most cases actually lead to the discovery of the reefs. The exception previously spoken of, however, now comes under consideration. It refers to auriferous surface composed of disturbed older and newer pliocene drift—in fact, remnants of imperfect denudation of these deposits—always betraying its character by the very waterworn condition of the gold it contains, and generally, though not always, by smooth rounded quartz pebbles. It occurs mostly on the slopes of, and in the gaps between the hills, the tops of which carry patches of the older drifts; sometimes, however, any undisturbed remains of the latter may be entirely absent in the immediate vicinity. Such surface has been worked in many parts of Maldon, Fryer's Creek, Campbell's Creek, and other districts; and the misunderstanding of its true nature has led to frequent vain attempts to discover in the neighbourhood the quartz reefs its contained gold was supposed to be derived from.

With regard to the comparative richness in gold of the different drift deposits just described, it may be affirmed that, comparing different areas, the older pliocene drift is the richest; but, on taking the entire extent of each of the drifts into calculation, it seems indeed very probable that the alluvial drift, as the more extensively developed, furnishes more gold than any of the other deposits.

The site of the richer washing-stuff in the course of the leads and alluvial gullies and flats is, according to experience, connected with certain features of the rock bottom and surrounding country. As some of the rules deducible in this respect may be mentioned the following:—Rich wash-stuff occurs—(1.) Where the bottom suddenly assumes a flatter inclination or fall than it had previously. (2.) Generally in the upper or commencing parts of the deposits, for the lower downward in the channels, the slower and broader the original current, the finer and more scattered the gold particles, more especially if, as it frequently happens, there are junctions of branch leads and gullies that only furnish an accession of poor or barren material. (3.) At such points where the current of the water was, through some local impediment, intercepted or dammed up, suffering thereby a retardation of its velocity, and permitting, in consequence, a deposition of the heavier particles previously carried along—for instance, both in front and beyond narrow places in the channels, and where the latter make sharp bends. It happens in bends especially often that the gold, on account of the break in the current, is found thrown high up on the opposing rise, whilst in straight portions of the channels it lies more in the deepest parts or "gutters." Where bars or rises of the bottom rock traverse gutters, it is not unfrequently found that the richest, though generally thinnest, wash-stuff rests right on the top of the bars or rises, and that the slope of the latter facing the current carries lower and poorer wash-stuff than the opposite one. (4.) Rich wash-stuff may always be expected at the junctions of two or more leads or gullies each of which is payably auriferous by itself. (5.) Where auriferous quartz reefs traverse leads and alluvial gullies, either laterally or longitudinally. In the first case, the greater richness of the wash-stuff extends generally only for some limited distance below the reefs; but whilst the extent is greater, if the angle of traverse is acute, the most favourable result is produced in the second case, where the reefs run actually in the channels of the drift deposits. Much depends in these respects, of course, upon the thickness and quality of the reefs, the fall of the channels, etc. (6.) In the cracks and pits ("dips," in miners' phrase) of an uneven bottom, the gold having there found a resting-place protected from the currents of the water. On this account it is also often observed that those portions of alluvial gullies and leads that run across or at right angles to the strike of the bottom rocks, especially where these are rather hard and jointed, and therefore expose the serrated edges of the beds, are richer, or contain frequently at least richer patches, than where the drift deposits run with the rocks. As a general rule, drift miners prefer, however, a soft bottom to a hard one.

Various other conditions and circumstances connected with the deposition of rich wash-stuff might be mentioned, but a consideration of all leads to the general conclusion that such deposits are very irregular, and, both as regards superficial extent and thickness, frequently subject to very sudden changes. At one place it forms stripes, at another, irregular nests and patches, whilst its thickness may decrease from several feet to hardly as many inches; sometimes it is sharply defined, and abruptly terminating; sometimes without any distinct boundary, and gradually running out all round.

The minerals that have hitherto been found associated with the gold in the wash-stuff, of especially the older gold-drifts, are *diamond*, *ruby*, *sapphire* and other varieties of *corundum*; *topaz*, *zircon*, *garnet*, *tourmaline*; of varieties of quartz—*rock-crystal*, *amethyst*, *cairngorm*, *common quartz*, *agate*, *chalcedony*; further, *common opal* and *wood opal*; all the three forms of titanic acid, *i.e.*, *rutile*, *anatase*, and *brookite*; *cassiterite*, *wolfram*, *osmiridium*, *native bismuth*, *bismuthite*, *native copper*, *chromite*, *menaccanite*, *magnetite*, *iron pyrites*, *etc.*—the latter most probably a secondary product *i.e.*, formed in the drift itself.

The tertiary deposits, as a whole, afford *lignite* or *brown coal*. A deposit of this fuel opened at Lal-lal, near Ballarat, is above 100 feet in thickness; larger deposits occur in Gippsland, from which brown coal is now sent to Melbourne as fuel, and experiments have been conducted with a view of utilising it for a fuel in the form of briquettes. The tertiary deposits also afford *limestones* suitable for mortars and cements; *salt*; *brick-earth*, and *clays* for bricks, tiles, and pottery of all kinds; *freestone*, and other stone suitable for building. Rich iron-ores (*brown hematite*) are also common, but whether in deposits of sufficient extent to pay for working remains yet to be proved.

MECHANICALLY-FORMED ROCKS.

CONGLOMERATES AND BRECCIAS OF LOWER SILURIAN AGE.

13.1. SLATE CONGLOMERATE.—A base of fine-grained, soft, micaceous sandstone, enclosing rounded pieces of slate.—*Section* 50, *Spring Plains. Geological* ¼ *sheet* 13 *N.E.*

13.2. QUARTZITE-BRECCIA.—Very fine-grained, dark sandstone base, enclosing larger and smaller angular fragments of very fine granular quartzite.—*From a gully south of allotment* 3, *section A1, Maldon.*

13.3. BRECCIA.—Composed of angular fragments of slate and granite, cemented by quartz which has crystallized in the interstices leaving in places small druses.—*From a vein in granite, Spring Creek, Beechworth.*

CONGLOMERATES AND BRECCIAS OF UPPER SILURIAN AGE.

14.1. CONGLOMERATE.—Fine-grained, quartzose, more or less ferruginous sandstone base, enclosing small rounded pebbles of quartz and different rocks, and densely filled with casts of fossils.—*Goulburn River.*

14.2. CONGLOMERATE.—Same as foregoing.—*Goulburn River.*

14.3. CONGLOMERATE.—Smaller and larger rounded pebbles of quartz, slate, dykestone, etc., cemented by black, carbonaceous lode-slate strongly impregnated with iron pyrites. This rock forms the footwall of the Diamond Reef, which runs alongside a feldspathic aphanite dyke. Taken at a depth of nearly 250 feet from the surface in the Union Company's mine. Owes its origin most probably to friction of the wall and the reef.—*Diamond Creek.*

14.4. CONGLOMERATE.—Same as foregoing.—*Union Company's mine, Diamond Creek.*

14.5. CONGLOMERATE.—Dark-grey, fine-grained, quartzose, sandstone base, cementing small, somewhat even-sized, rounded pebbles of quartz; encloses casts of fossils.—*From a boulder in Goulburn River, below Maori Creek.*

14.6. CONGLOMERATE.—Light yellowish, fine grained sandstone base, enclosing pebbles of slate arranged in a rudely stratified manner.—*Woongulmerang, Snowy River.*

14.7. CONGLOMERATE.—Much decomposed.—*Woongulmerang, Snowy River.*

14.8. BRECCIA, HORNSTONE-BRECCIA.—Very fine-granular, apparently dense, black quartzite or hornstone base, strongly impregnated with iron pyrites and enclosing angular, or but slightly rounded, larger and smaller fragments of quartz and feldspar, which impart to the rock in parts quite a porphyritic character.—*Duncan's tin-lode, Melbourne road, Beechworth.*

14.9. BRECCIA, HORNSTONE-BRECCIA, GRANITE-BRECCIA.—Dense, dark, hornstone base, enclosing angular fragments of granite and feldspar, besides fragments and crystals of quartz, dark violet-coloured fluorspar, and sparingly cassiterite; looks in parts like a porphyry.—*Duncan's tin-lode, Melbourne road, Beechworth.*[*]

14.10. BRECCIA, GRANITE-BRECCIA.—Irregular mixture of angular fragments of granite, quartz, quartzite, hornstone, and feldspar, traversed by small irregular veins enclosing patches of fluorspar, and sparingly impregnated with crystalline grains of cassiterite and iron pyrites.—*Duncan's tin-lode, Melbourne road, Beechworth.*

CONGLOMERATES AND BRECCIAS OF UPPER PALÆOZOIC AGE.

15.1. CONGLOMERATE, PUDDINGSTONE.—Larger and smaller rounded pebbles of quartz, sandstone, slate, quartzite, etc., intermixed with sand and rather loosely cemented by a small percentage of argillaceous paste; resembles compacted shingle. —*Wild Duck Creek, near Heathcote.*

15.2. CONGLOMERATE, PUDDINGSTONE. — More or less rounded pebbles and grains of quartz, quartzite, slate, sandstone, etc., embedded in an argillaceous paste.—*N.E of Mia-mia, parish of Spring Plains.*

15.3. CONGLOMERATE, PUDDINGSTONE.—Same as No. 15.2. —*N.E. of Mia-mia, parish of Spring Plains.*

15.4. CONGLOMERATE.—Larger and smaller, more or less rounded pebbles and grains of sandstone, quartz, quartzite, etc., rather sparingly distributed through an argillaceous paste. —*N.E. of Mia-mia, parish of Spring Plains.*

15.5. CONGLOMERATE. —Same as No. 15.4.—*Mia-mia, parish of Spring Plains.*

CONGLOMERATES AND BRECCIAS OF MESOZOIC AGE.

16.1. CONGLOMERATE, Puddingstone.—Consists of a base of quartz-grit or small-grained quartz conglomerate, enclosing larger rounded pebbles of quartz and greenstone.—*Barrabool Hills, near Geelong.*

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[*] Concerning the age of the rocks in the Beechworth district, whether upper or lower silurian, there still exists some uncertainty, on account of the non-discovery of direct palæontological evidence. However, as these rocks are nearer related in geographical position to the upper than to the lower silurian, and, moreover, as indirect fossil evidence exists in patches of boulder conglomerate (upper palæozoic?) in the Eldorado valley, containing pebbles and boulders of highly fossiliferous upper silurian sandstone, which, on account of the softness of the rock, could not have travelled from afar, the specimens in the collection have provisionally been classed as of upper silurian age.

16.2. BRECCIA.—Composed principally of silicified remains of plants and carbonaceous matter, cemented by gritty sandstone.—*Barrabool Hills, near Geelong.*

CONGLOMERATES AND BRECCIAS OF CAINOZOIC AGE.

17.1 QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Large rounded quartz-pebbles bound together by a kaolin-like cement, mixed with small quartz-grains; apparently represents granitic detritus, the feldspar of which is decomposed to kaolin, whilst the mica has been removed.—*From an auriferous drift lead, Mount Korong.*

17.2. QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Very similar to foregoing.—*From an auriferous drift-lead, M'Intyre's Diggings.*

17.3. QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Rounded, larger and smaller quartz pebbles and grains, cemented by brown iron-ore; very hard.—*From an auriferous drift-lead, Kingower.*

17.4. QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Rounded quartz-pebbles, rather small and of somewhat equal size; cemented by arenaceous brown iron-ore.—*From an auriferous drift-lead, St. Arnaud.*

17.5. QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Rounded quartz-pebbles cemented by arenaceous brown iron-ore.—*From auriferous drift, Bendigo.*

17.6. QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Larger and smaller quartz-pebbles cemented by brown iron-ore.—*From auriferous drift, Bendigo.*

17.7. QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Small rounded quartz-pebbles cemented by arenaceous brown iron-ore —*From an auriferous drift-lead, Guildford.*

17.8. QUARTZ CONGLOMERATE.—Small rounded pebbles and larger and smaller grains of quartz sparingly distributed through a finely-granular, hard quartzite base.—*Flemington.*

17.9. QUARTZ CONGLOMERATE, QUARTZ PUDDINGSTONE.—Larger rounded quartz-pebbles cemented by brown iron-ore.—*From an auriferous drift-lead, Loddon River, near Guildford.*

17.10. CONGLOMERATE. — Larger and smaller partially rounded pebbles of quartz cemented by manganiferous iron-ore.—*Glenmaggie, Gippsland.*

17.11. BRECCIA.—Angular fragments of slate, sandstone, and quartz, bound together by a ferruginous cement; rather porous, yet hard and tough.—*From auriferous drift, Dunolly.*

17.12. BRECCIA, QUARTZ BRECCIA.—Angular quartz-gravel, cemented by an argillaceous, slightly ferruginous base.—*From auriferous drift, Bendigo.*

17.13. BRECCIA, QUARTZ BRECCIA.—Angular fragments of quartz sparingly distributed through an indurated clay resembling kaolin which is in part highly ferruginous.—*From auriferous drift, M'Intyre's Diggings.*

17.14. BRECCIA, QUARTZ BRECCIA.—Large angular granitic quartz-grains bound together by a white kaolin-clay mottled brown and red by oxide of iron; rather soft; represents apparently compacted granite detritus, the feldspar of which is decomposed, whilst the mica has been removed.—*M'Intyre's Diggings.*

17.15. BRECCIA, QUARTZ BRECCIA.—Angular, larger and smaller fragments and grains of quartz cemented by manganiferous brown iron-ore.—*From auriferous drift, Kingower.*

17.16. BRECCIA, QUARTZ BRECCIA.—Hardened granitic detritus, without mica, enclosing large angular fragments of quartz; in part coarse-gritty.—*Sutton Grange, near Mount Alexander.*

17.17. BRECCIA, QUARTZ BRECCIA.—Angular fragments of quartz cemented by a base consisting of fine-granular sugary-looking quartzite.—*From auriferous drift, Clunes.*

17.18. BRECCIA, QUARTZ BRECCIA.—A base composed of very fine granular, quite dense-looking quartzite, enclosing angular fragments of quartz; forms cakes in auriferous drifts. —*Loddon River, near Guildford.*

17.19. BRECCIA, QUARTZ BRECCIA.—Small angular quartz-gravel, scattered scales of mica, and grains of decomposed feldspar, cemented by manganiferous brown iron-ore; rather porous; looks like cemented granitic detritus.—*Ararat.*

17.20. BRECCIA, QUARTZ BRECCIA.—Angular, larger and smaller quartz-grains, with a few particles of decomposed feldspar, cemented by an argillaceous, slightly micaceous, and ferruginous base: rather soft and porous; represents apparently cemented granitic detritus.—*M'Intyre's Diggings.*

17.21. BRECCIA, QUARTZ BRECCIA.—Granitic quartz-gravel cemented by an indurated white and grey clay (kaolin) traversed by small veins of hardened grey clay.—*M'Intyre's Diggings.*

17.22. BRECCIA, GRANITE BRECCIA.—Angular fragments of coarse-grained granite, quartzite, quartz, metamorphic sandstone, etc., bound together by indurated grey clay showing scattered scales of mica.—*M'Intyre's Diggings.*

SANDSTONES OF LOWER SILURIAN AGE.

18.1. SANDSTONE, QUARTZ-GRIT. — Even-sized, rather coarse and angular grains of quartz, cemented by a very small percentage of a base of apparently feldspathic character; in part ferruginous.—*Mia-mia Ranges, sections* 42 *and* 66, *M'Ivor Road, Spring Plains.*

18.2. SANDSTONE, QUARTZ-GRIT. — Larger and smaller angular grains of quartz, cemented by very little feldspathic-looking base.—*Talbot.*

18.3. SANDSTONE.—Medium-grained; highly quartzose and hard, resembling quartzite; the quartz grains connected by very little siliceous cement; shows irregular red, ferruginous patches, and is in some parts gritty.—*Inglewood.*

18.4. SANDSTONE.—Medium-grained; highly quartzose, the quartz grains connected by very little feldspathic-looking cement; in parts brecciated; might be useful as a building stone.—*Loddon River.*

18.5. SANDSTONE.—Rather coarse-grained, soft, and feldspathic.—*M'Intyre.*

18.6. SANDSTONE.—Highly ferruginous, fine-grained, and micaceous.—*Talbot.*

18.7. SANDSTONE.—Very similar to No. 18.6.—*Inglewood.*

18.8. SANDSTONE.—Very fine grained and micaceous; shows more or less ferruginous bands in the line of cleavage.—*Newstead.*

18.9. SANDSTONE.—Fine-grained, soft, and rather argillaceous; highly ferruginous and micaceous.—*Loddon River.*

18.10. SANDSTONE.—Fine-grained, rather soft, and argillaceous; highly ferruginous, micaceous, and slightly porous.—*Talbot.*

18.11. SANDSTONE.—Fine-grained, soft, very micaceous and feldspathic; mottled with irregular ferruginous patches; appears to be of a somewhat metamorphic character.—*M'Intyre.*

18.12. SANDSTONE, QUARTZ-GRIT. — Coarse-grained and highly quartzose; the greater portion coloured brown and red by hydrous ferric oxide, and traversed by a small quartz-vein.—*Kingower.*

18.13. SANDSTONE.—Rather fine-grained, ferruginous, and very micaceous; small, rounded, lighter-coloured portions of apparently feldspathic and less micaceous character, irregularly distributed throughout the mass, impart to the rock a mottled, conglomeratic appearance.—*Loddon River.*

18.14. SANDSTONE.—Medium-grained, minutely porous, and very feldspathic.—*M'Intyre.*

18.15. SANDSTONE.—Fine-grained, rather argillaceous, and slightly micaceous; in part ferruginous—*Mia-mia Ranges, sections* 42 *and* 66, *Spring Plains.*

18.16. SANDSTONE.—Medium-grained, rather feldspathic, and micaceous; cleavage rather slaty.—*Kingower.*

18.17. SANDSTONE.—Very fine-grained and argillaceous, resembling an indurated mudstone; finely banded in two different directions; one set of bands of a ferruginous character impart a concretionary appearance.—*Pyrenees.*

18.18. SANDSTONE, QUARTZ-GRIT.—Rather coarse-grained and highly quartzose; cleavage even and regular.—*Stony Creek Reservoir, Geelong Waterworks.*

18.19. SANDSTONE.—Coarse-grained, highly quartzose, and traversed by quartz-veins; resembles quartzite but shows a cementing medium.—*Brisbane Ranges, near Geelong.*

18.20. SANDSTONE.—Medium-grained, soft, rather feldspathic, and slightly micaceous.—*M'Intyre.*

18.21. SANDSTONE.—Very fine-grained, tough, siliceous, and minutely micaceous.—*Loddon River.*

18.22. SANDSTONE.—Very similar in character to foregoing; shows faint ferruginous bands.—*From between M'Ivor and Bendigo.*

18.23. SANDSTONE.—Medium-grained, rather micaceous, and slightly feldspathic; in part ferruginous.—*Coliban River.*

18.24. SANDSTONE.—Very fine-grained, micaceous, and slaty; might be called a "slaty sandstone."—*Mount Franklin.*

18.25. SANDSTONE.—Medium-grained and rather micaceous; shows very regular ferruginous lines and bands, which impart to it a concretionary appearance.—*Bendigo.*

18.26. SANDSTONE.—Medium-grained, rather tough, very quartzose, and slightly micaceous; might be useful as a building stone.—*From between M'Ivor and Bendigo.*

18.27. SANDSTONE.—Very fine grained, argillaceous, and slightly micaceous; full of impressions of fossil plants *(fucoids?)* —*Kingower?*

18.28. SANDSTONE.—Very fine-grained, argillaceous, and slightly micaceous; texture slaty.—*Swiper's Reef, Maldon.*

18.29. SANDSTONE.—Fine-grained, rather soft, and slightly micaceous; cleavage flagstone-like.—*Maryborough.*

18.30. SANDSTONE.—Rather soft, fine-grained, very micaceous, and somewhat argillaceous.—*From near Bacchus Marsh.*

18.31. SANDSTONE, FLAGSTONE.—Medium-grained, quartzose and slightly micaceous; very thin-bedded, and of the character of a flagstone.—*Redesdale, Campaspe River, section* 40.

18.32. SANDSTONE.— Fine-grained, hard, quartzose sandstone; very micaceous upon the cleavage planes; shows irregular ferruginous markings.—*Section* 50, *Spring Plains.*

SANDSTONES OF UPPER SILURIAN AGE.

19.1. SANDSTONE, QUARTZ-GRIT.—Very coarse-grained, gritty, ferruginous sandstone, with occasional large rounded pebbles of quartz; densely filled with casts of fossils.—*Forms the walls of the Waverley Reef, Wood's Point.*

19.2. SANDSTONE.—Fine-grained, micaceous, rather soft; encloses casts of fossils.—*Heathcote.*

19.3. SANDSTONE.—Fine-grained, rather soft, argillaceous, and much jointed.— *Yan Yean, Plenty River.*

19.4. SANDSTONE.—Medium-grained, very quartzose, highly fossiliferous.—*Range east of township of Heathcote.*

19.5. SANDSTONE.—Medium - grained, rather quartzose, slightly micaceous; appears to be too much jointed for building purposes.— *Yan Yean, Plenty River.*

19.6. SANDSTONE.—Fine-grained, rather argillaceous, and highly ferruginous; contains casts of fossils.—*Heathcote.*

19.7. SANDSTONE.—Same as No. 19.6.—*Heathcote.*

19.8. SANDSTONE.—Fine-grained, quartzose, and ferruginous; fossiliferous.—*Heathcote.*

19.9. SANDSTONE.—Medium fine-grained, very quartzose, slightly ferruginous.—*Heathcote.*

19.10. SANDSTONE.—Very fine-grained and rather argillaceous; slightly micaceous and in part ferruginous; densely filled with casts of fossils.—*Range north-east of Kilmore.*

19.11. SANDSTONE.—Fine-grained, rather argillaceous, and micaceous; thin-bedded, with slate-like cleavage; full of fossils.—*Moonee Ponds Creek.*

19.12. SANDSTONE.—Fine - grained and somewhat argillaceous; thin-bedded, jointed, and highly micaceous upon the bedding planes.— *Yan Yean, Plenty River.*

19.13. SANDSTONE.—Fine - grained, ferruginous, and argillaceous; densely filled with casts of fossils.—*From near Waverley Reef, Wood's Point.*

19.14. SANDSTONE.—Fine-grained, argillaceous, and rather micaceous; partly stained by oxide of iron.—*From the foundation of the Working Men's College, Latrobe Street, Melbourne.*

19.15. SANDSTONE.—Ferruginous and slightly micaceous; densely filled with fossils (*orthis*).—*From the foundation of the Working Men's College, Latrobe Street, Melbourne.*

19.16. SANDSTONE.—Fine-grained and rather micaceous sandstone concretion.—*From the foundation of the Working Men's College.*

SANDSTONES OF UPPER PALÆOZOIC AGE.

20.1. SANDSTONE.—Coarse-grained, rather friable, argillaceous, slightly feldspathic sandstone, rendered gritty by larger grains of quartz, quartzite, slate, etc.—*Wild Duck Creek, Heathcote.*

20.2. SANDSTONE.—Rather fine-grained and ferruginous; too soft for building purposes.—*Wild Duck Creek, Heathcote.*

Mr. Norman Taylor's Geological Note.—The formation from which specimens Nos. 15.2, 15.3, 15.4, and 15.5 are taken, is an extension of the beds occurring at the Wild Duck Creek, exemplified by specimens Nos. 15.1, 20.1, and 20.2, and forms probably either the base of the carbonaceous series or the top of the upper palæozoic beds; but fossils not having been discovered its exact age is somewhat doubtful. The conglomerate specimens (Nos. 15.2, 15.3, 15.4, 15.5) were taken from a hole sunk by the geological survey party at the Mia-mia on the Heathcote road, no bottom being found at a depth of 30 feet. The conglomerate consists of a bluish-grey, very hard mud-cement, sometimes having a slight yellow tinge, and is in places interstratified with veins of an aluminous mineral. It becomes much lighter in colour by exposure, and soon crumbles to pieces. The pebbles contained in it vary very much in size, and consist of granites of various colours and textures, principally red and white; porphyries; indurated sandstones; quartz, white, red and blue; flinty quartzites; and a peculiar flint-coloured rock with red feldspar crystals weathering white. From one of the constituents of this latter rock having externally decomposed in horizontal lines, it has the appearance at first sight of gneiss. This deposit forms a very good red soil, but is boggy and rotten in winter. At this locality it is very thin, the silurian rocks cropping up in the almost flat gullies. On the Wild Duck Creek, however, a fine section—in many places at least 90 feet above the level of the creek—may be seen under Robinson's station. The conglomerate is here capped by a yellowish grit (No. 20.1), and rests on yellow sandstone (No. 20.2), forming large open downs. About two miles higher up the Wild Duck Creek, near Wilton's station, the beds may be seen filling up depressions in the upturned edges of the lower silurian beds.

20.3. SANDSTONE.—Rather coarse-grained, feldspathic and minutely porous ; applicable for building purposes.—*Werribee, near Ballan. Geological ¼ sheet 11 S. W.*

20.4. SANDSTONE.—Medium-grained, rather argillaceous and very slightly micaceous ; shows fossil-plant impressions ; useful as a building stone.—*Werribee, half-mile south of East Ballan.*

20.5. SANDSTONE.—Fine-grained, argillaceous and somewhat micaceous ; occurs in thick beds and does not form a good building stone, though having the appearance of one, being too soft and easily affected by atmospheric influence.—*Johnson's quarry at the Coliban River, near Kyneton.*

20.6. SANDSTONE.—Medium-grained and quartzose, but too soft and friable for building purposes ; traversed by thin ferruginous bands.—*Johnson's quarry at the Coliban River, near Kyneton.*

Geological Note.—The sandstone represented by specimens Nos. 20.5 and 20.6 is of white or light-yellow colour, often brown-banded, and consists of very fine quartz grains rather loosely cemented by argillaceous matter. It unconformably overlies the silurian rocks in very thick beds, and is interstratified with thin beds of a very coarse conglomerate or puddingstone. Fossils seem to be entirely absent. The stone has been used in several buildings in Kyneton and the neighbourhood ; but though soft and easily worked, and sometimes becoming apparently harder on exposure to the atmosphere, it is very liable to exfoliate, and cannot be procured of uniform colour in large quantities. For these reasons the quarries have been abandoned. The tertiary (older pliocene) gold-bearing gravel-beds overlie this sandstone in several places, whilst basalt overlies both, and seems to have altered the sandstone at the places of contact into a hard quartzite, numbers of angular pieces of which, intermixed with similar pieces of a coarse quartz-grit, occur scattered along the respective boundaries, a specimen of the quartzite being represented further on by No. 25.2.

20.7. SANDSTONE.—Very dense, hard quartzite base, enclosing small grains of quartz.—*From a tunnel* 430 *feet long, Hall's Gap, Grampians.*

20.8. SANDSTONE.—Fine-grained and rather porous ; represents a four-sided prism, one side of which is rounded.—*Koolomert.*

20.9. SANDSTONE. — Very fine-grained and hard; the weathered surfaces have a ferruginous coating and show a peculiar concretionary structure.—*Grampians, west of Stawell.*

SANDSTONES AND GRITS OF MESOZOIC AGE.

21.1. SANDSTONE-GRIT.—Granitic detritus, principally composed of coarse grains of quartz, smaller ones of more or less decomposed feldspar, and little mica, rather loosely cemented by slightly ferruginous, argillaceous matter.—*Barrabool Hills, near Geelong.*

21.2. SANDSTONE-GRIT.—Very coarse grains of quartz, feldspar, sandstone, slate, etc., cemented by an argillaceous paste; in parts conglomeratic, through enclosed larger, rounded fragments of quartz, sandstone, etc.—*Barrabool Hills, near Geelong.*

21.3. SANDSTONE.—Very coarse-grained, gritty, and feldspathic; very similar to No. 21.2, but is harder.—*Barrabool Hills, near Geelong.*

21.4. SANDSTONE.—Very similar to foregoing; coarse-grained, somewhat gritty, argillaceous, and feldspathic; encloses sparingly larger pebbles, and is interstratified with thin seams of what appears to be cemented granitic detritus.—*Barrabool Hills, near Geelong.*

21.5. SANDSTONE.—Rather coarse-grained, feldspathic and minutely porous; might be applicable as building stone.—*Barrabool Hill, near Geelong.*

Mr. Selwyn's Geological Note.—The carbonaceous rocks of the Barrabool Hills (from which the foregoing specimens are taken) consist of a series of hard, thick-bedded, brown and grey sandstones, much jointed, and with thin veins of carbonate of lime. They alternate with shales and conglomerates, and have an average dip of E. 30° S., at an inclination of 1 in 4. Over the area comprised between the village of Ceres and the municipality of Newtown and Chilwell, about 3,000 feet of carbonaceous strata crop out at the surface; the highest beds are found to the east and the lowest to the west. It is highly probable that this part of the series has been tested for coal in the Bellarine District, since an intermediate synclinal axis exists in the ground between Kensington and Geelong; and the Barrabool Hill sandstones shales, etc., would thus be a recurrence at the surface of those bored through in the Bellarine District. The sandstones of the Barrabool Hills are extensively quarried and used for building purposes in and around Geelong. They are variable in composition and durability, and their prevailing dull, greenish-brown colour renders them objectionable for large buildings in which architectural effect is required.

21.6. SANDSTONE.—Coarse-grained, very soft, and friable; highly charged with carbonaceous matter; slightly micaceous; structure slaty.—*Cape Otway.*

21.7. SANDSTONE.—Rather coarse-grained, tough, and hard; thinly cleavable; calcareous; encloses carbonised fragments of plants.—*Sandford, Wannon River.*

21.8. SANDSTONE.—Fine-grained and somewhat argillaceous; of medium hardness; occurs in thick beds, and forms a tolerably good building stone.—*Darley Quarry, near Bacchus Marsh.*

Mr. Selwyn's Geological Note.—The quarries in this sandstone, near Bacchus Marsh, were opened in 1862, and a considerable quantity of the stone was sent to Melbourne, and used in the construction of the Treasury, the Parliamentary Library, and the Custom House. It has not since been used in Melbourne. When opening the quarries, the beds were found to be very variable in composition and so full of joints as to make it both difficult and costly to obtain the stone in quantity of the uniform texture and quality essential in large buildings. It constitutes, however, a useful building stone for local purposes, or where small quantities only are required. The buildings above referred to (especially the Parliamentary Library) do not present favourable evidence as regards its durability when exposed to the atmosphere of the city. Some of the beds are full of fossil-plant remains, of which *gangamopteris longifolius* (McCoy) is the most abundant species; other beds afford excellent grindstones.

21.9. SANDSTONE.—Very fine-grained and slightly argillaceous; has a regular banded structure.—*Warragul.*

SANDSTONES AND GRITS OF CAINOZOIC AGE.

22.1. SANDSTONE, QUARTZ-GRIT.—Coarse, more or less rounded quartz-grains, rather loosely cemented by a ferruginous base.—*From auriferous drift, Bendigo.*

22.2. SANDSTONE, QUARTZ-GRIT.—Very similar to foregoing.—*Royal Park, near Melbourne.*

22.3. SANDSTONE, QUARTZ-GRIT.—Coarse, more or less rounded quartz-sand cemented by brown iron-ore.—*Schnapper Point.*

22.4. SANDSTONE, QUARTZ-GRIT.—Rounded and angular, generally coarse grains, and some larger angular fragments of quartz, cemented by a base consisting of dense quartzite.—*Flemington.*

22.5. SANDSTONE, QUARTZ-GRIT.—Rather fine quartz-sand cemented by a base of dense, slightly ferruginous quartzite.—*Flemington.*

22.6. SANDSTONE, QUARTZ-GRIT.—Similar to foregoing.—*Flemington.*

22.7. SANDSTONE, QUARTZ-GRIT.—A dense quartzite base enclosing angular and rounded, rather small grains of quartz; very dense and hard.—*From under basalt, Saltwater River.*

22.8. SANDSTONE, QUARTZ-GRIT.—A rather loose and coarsely-granular quartzite base cementing angular and rounded, rather coarse grains of quartz.—*From under basalt, Saltwater River.*

22.9. SANDSTONE, QUARTZ-GRIT.—Angular quartz-grains and scattered scales of mica—derived from the disintegration of granite—loosely cemented by an argillaceous (kaolinic) base. —*Station Peak, near Geelong.*

22.10. SANDSTONE GRIT (Regenerated Granite).—Angular grains of quartz, more or less decomposed feldspar, and scales of mica (granite detritus), cemented by an argillaceous base.—*Beechworth.*

22.11. SANDSTONE, QUARTZ-GRIT.—Rather coarse, angular quartz-grains cemented by impure brown iron-ore; highly cavernous.—*Royal Park, near Melbourne.*

22.12. SANDSTONE, QUARTZ-GRIT.—Rather coarse quartz-grains cemented by impure brown iron-ore; porous and slightly cavernous; contains scattered casts of fossils.—*Royal Park, near Melbourne.*

22.13. SANDSTONE, QUARTZ-GRIT.—Coarse quartz-grains cemented by impure brown iron-ore; cavernous and porous; rich in casts of fossils and concretionary patches of brown iron-ore.—*Royal Park, near Melbourne.*

22.14. SANDSTONE.—Medium-grained and argillaceous, with larger scattered quartz-grains and scales of mica; apparently comminuted granitic material.—*From the bottom of a deep shaft on the plain near Lake Hindmarsh.*

22.15. SANDSTONE.—Medium fine-grained and highly ferruginous; traversed by bands of ferruginous quartz-grit.—*Royal Park, near Melbourne.*

22.16. SANDSTONE—Coarse-grained, highly ferruginous, and in part conglomeratic; full of casts of fossils.—*Flemington.*

22.17. SANDSTONE.—Medium fine-grained, highly ferruginous, and minutely porous.—*Brighton.*

22.18. SANDSTONE.—Medium fine-grained, rather soft, and highly ferruginous.—*Schnapper Point.*

22.19. SANDSTONE.—Medium fine-grained, ferruginous, and minutely porous; slightly calcareous.—*Brighton.*

22.20. SANDSTONE.—Coarse-grained, very soft, and highly ferruginous.—*Brighton Beach.*

22.21. SANDSTONE.—Medium-grained, ferruginous, and rather friable; full of casts of fossils.—*Flemington.*

22.22. SANDSTONE.—Medium-grained and very friable; might be termed a "compacted sand;" shows ferruginous bands.—*Brighton Beach.*

22.23. SANDSTONE.—Same as foregoing.—*Brighton Beach.*

22.24. SANDSTONE.—Coarse-grained, hard, and rather gritty; in parts more or less ferruginous; densely filled with spheroidal ferruginous concretions.—*From near the Cemetery, Maldon.*

22.25. SANDSTONE.—Fine-grained, extremely friable, and slightly ferruginous; might be called a "compacted sand."—*Barwon Heads, near Geelong.*

22.26. SANDSTONE.—Medium grained, ferruginous, and soft; encloses scattered casts of fossils.—*Brighton.*

22.27. SANDSTONE.—Rather gritty and very friable; might be called a "compacted sand;" in part highly ferruginous.—*Geelong.*

22.28. SANDSTONE.—Rather gritty, friable, and slightly calcareous; might be termed a "compacted sand;" shows faint ferruginous bands and lines.—*Brighton.*

22.29. SANDSTONE.—Gritty, rather calcareous, and very friable; represents a "compacted sand."—*Brighton.*

22.30. SANDSTONE.—Medium-grained, very soft, rather calcareous, and slightly micaceous.—*Geelong.*

22.31. SANDSTONE.—Medium-grained and very friable; the black colour is due to the admixture of carbonaceous matter.—*Schnapper Point.*

22.32. SANDSTONE.—Medium-grained and very friable; the dark colour being probably due to the admixture of carbonaceous matter.—*Geelong.*

QUARTZ ROCKS OF LOWER SILURIAN AGE.

23.1. QUARTZITE, QUARTZ ROCK.—Coarsely crystalline-granular; in parts of a gritty texture; modification of rock No. 18.1—*Mia-Mia Ranges, sections 42 and 66; M'Ivor-road, Spring Plains.*

23.2. QUARTZITE, QUARTZ ROCK.—Coarsely crystalline-granular.—*Inglewood.*

23.3. QUARTZITE, QUARTZ ROCK.—Similar to No. 23.2, but a little more ferruginous, and, in consequence, showing some variation in colour.—*Inglewood.*

23.4. QUARTZITE, QUARTZ ROCK.—Very finely crystalline-granular; apparently quite dense and hornstone-like; might furnish good grinding stones.—*Top of spur close to north-east corner of Mount Tarrangower Tunnelling Company's lease.*

23.5. QUARTZITE, QUARTZ ROCK.—Rather coarsely crystalline-granular, ferruginous, and in parts of brecciated appearance.—*Inglewood.*

23.6. LYDIAN-STONE, LYDITE (Siliceous Slate, *Kieselschiefer*).—Irregularly traversed by a network of very fine quartz-veins, and more or less affected by decomposition.—*Loddon River, near Maldon.*

23.7. LYDIAN-STONE, LYDITE (Siliceous Slate, *Kieselschiefer*).—Traversed by a network of very fine, more or less ferruginous quartz-veins.—*Ararat.*

23.8. LYDIAN STONE, LYDITE (Siliceous Slate, *Kieselschiefer*).—Shows a kind of rude prismatic structure.—*Loddon River, near Maldon.*

QUARTZ ROCKS OF UPPER SILURIAN AGE.

24.1. QUARTZITE, QUARTZ ROCK.—Very finely crystalline-granular, tough and hard, slightly impregnated with iron pyrites, and traversed by quartz-veins; rather calcareous and resembling crystalline limestone; shows partings of black carbonaceous slate.—*Thomson River Copper Mine, near Walhalla.*

24.2. QUARTZITE, QUARTZ ROCK.—Same as No. 24.1.—*Thomson River Copper Mine, near Walhalla.*

24.3. QUARTZITE, QUARTZ ROCK. — Finely crystalline-granular, in parts slightly gritty and conglomeratic; highly ferruginous and very hard and tough.—*From between M'Ivor and Bendigo.*

24.4. QUARTZITE, QUARTZ ROCK. — Finely crystalline-granular and full of casts of fossils.—*Goulburn River.*

24.5. QUARTZITE, QUARTZ ROCK.—Same as No. 24.4.—*Goulburn River.*

QUARTZ ROCKS OF UPPER PALÆOZOIC AGE.

25.1. QUARTZITE, QUARTZ ROCK.—Micro-crystalline-granular, of jaspery aspect, highly ferruginous; shows in part a coating of pure mammillated brown iron-ore.—*Grampians.*

25.2. QUARTZITE, QUARTZ ROCK.—Finely crystalline-granular, traversed by faint ferruginous bands. (*See* Geological Note under No. 20.6.)—*Neighbourhood of Johnson's quarry at the Coliban River, near Kyneton.*

25.3. LYDIAN-STONE, LYDITE (Siliceous Slate, *Kieselschiefer*).—Highly fractured by a network of joints and fine quartz-veins, which latter impart to it in places a brecciated appearance.—*Mount Staveley, six miles west of Wickliffe.*

QUARTZ ROCKS OF CAINOZOIC AGE.

26.1. QUARTZITE, QUARTZ ROCK.—Main portion very dense and flint-like; remainder, enclosed within the former, finely crystalline-granular and slightly porous.—*From underneath the basalt at the Saltwater River.*

26.2. QUARTZITE, QUARTZ ROCK.—Finely crystalline-granular and strongly ferruginous; slightly conglomeratic through enclosed small, well-rounded and angular pebbles of quartz.—*Flemington.*

26.3. QUARTZITE, QUARTZ ROCK.—Very fine-granular, compact, and hard, with hackly fracture.—*Flemington.*

26.4. QUARTZITE, QUARTZ ROCK.—An irregular mixture of dense, flinty rock, with gritty and brecciated portions.—*Goulburn River.*

26.5. QUARTZITE, QUARTZ ROCK.—Very fine-granular and dense; small patches of flinty quartzite throughout the mass give it a mottled appearance.—*Lismore, Co. Hampden.*

26.6. QUARTZITE, QUARTZ ROCK.—Finely crystalline-granular and compact; resembles flint.—*Kangaroo Ground, Co. Evelyn.*

SHALES AND MUDSTONES OF LOWER SILURIAN AGE.

The term *Mudstone*, introduced into science by Sir Roderick Murchison, is especially applicable to a kind of rock holding an intermediate position between very fine-grained, soft sandstone and soft shale, which is very prevalent on many of our goldfields. Whilst, on the one hand, it is not firm enough and too fissile to be termed a sandstone, it is yet too arenaceous—

though very minutely so—to be properly called a shale. It adheres strongly to the tongue, gives an earthy odour when breathed upon, and falls more or less quickly to a muddy non-plastic mass in water, or on exposure to the atmosphere. It is, in fact, a stratified, somewhat indurated, mud, composed of levigated sandstone, shale, and clay-slate material, showing generally a well-developed slaty or fissile texture. Its prevailing colour is mostly white or yellowish-white; but darker shades of yellow, brown, red, and blueish-black, the former from admixture of hydrous ferric oxide, the latter from that of carbonaceous matter, are also not rare. A banded or mottled appearance in all the above shades of colour is not unfrequently met with. The term "pipeclay," used by our alluvial miners in the phrases, "the washdirt rests on pipeclay," "driving in the pipeclay bottom," etc., refers in most instances to the softer or friable basset edges of beds of this rock.

27.1. MUDSTONE.—Texture imperfectly slaty; highly argillaceous, soft and minutely mottled by ferruginous and dendritic markings.—*Bendigo.*

27.2. MUDSTONE.—Argillaceous, somewhat indurated, and irregularly traversed by red ferruginous bands, causing a concretionary appearance; texture imperfectly slaty.—*Bendigo.*

27.3. MUDSTONE.—The same in character as No. 27.2—*Bendigo.*

27.4. MUDSTONE.—A soft white portion in contact with a more indurated, mottled, ferruginous one; texture imperfectly slaty.—*Bendigo.*

27.5. MUDSTONE.—Very soft and less argillaceous than foregoing specimens; texture perfectly slaty; approaching fissile. —*Pyrenees.*

27.6. MUDSTONE.—Very soft and friable, and marked with extreme regularity by parallel greyish-white and greyish-black bands.—*Bendigo.*

27.7. MUDSTONE.—Somewhat indurated, rather argillaceous, and showing pretty regular, parallel, greyish-white, grey, and narrow purple-coloured bands; texture imperfectly slaty.—*Inglewood.*

27.8. MUDSTONE—Rather argillaceous, and showing somewhat regular parallel, faintly-brown, ferruginous bands; texture thin-slaty.—*Bendigo.*

27.9. MUDSTONE.—Slightly arenaceous, soft, apparently feldspathic or like impure kaolin; resembles decomposed elvan-dykestone.—*Swiper's Reef, Maldon.*

27.10. MUDSTONE.—Very soft, white, and argillaceous; much resembles kaolin.—*Swiper's Reef, Maldon.*

27.11. MUDSTONE.—Very soft and arenaceous.—*Bendigo.*

27.12. MUDSTONE.—Rather indurated and arenaceous (sandstone-like), and densely marked by somewhat regular, parallel, ferruginous bands.—*Inglewood.*

27.13. MUDSTONE.—Strongly indurated, arenaceous, slightly micaceous, and densely filled with ferruginous, concretionary, stalk-like bodies, arranged in an imperfectly-radiating manner, which imparts to the design the appearance of coralline structure.—*Loddon River.*

27.14. MUDSTONE.—Argillaceous, somewhat indurated, and traversed irregularly by faint, brown, ferruginous bands; texture slaty.—*Dunolly.*

27.15. MUDSTONE.—Very soft and friable; texture slaty; shows polished-looking slate-like faces.—*Lord Malmsbury Company's Claim, near Malmsbury.*

27.16. MUDSTONE.—Rather indurated, argillaceous, of mottled appearance, and densely filled with small, rounded, concretionary, ferruginous bodies or granules, imparting to it the character of being metamorphosed; texture slaty.—*Pyrenees.*

27.17. MUDSTONE.—Rather indurated and slightly micaceous; traversed very regularly by parallel, ferruginous bands. *Welshman's Reef, Sandy Creek, near Maldon.*

SHALES AND MUDSTONES OF UPPER SILURIAN AGE.

28.1. SHALE. — Argillaceous and slightly micaceous, apparently thick-bedded; cleavage quite imperfect.—*Upper Yarra.*

28.2. SHALE.—Highly indurated and argillaceous; in part very micaceous, ferruginous, and irregularly traversed by ferruginous seams; cleavage very uneven and imperfect.—*Quarry near Botanical Gardens, Melbourne.*

28.3. SHALE.—Highly argillaceous and rather micaceous; cleavage somewhat slaty, but very uneven.—*Upper Yarra.*

28.4. SHALE.—Indurated, argillaceous and rather slaty, slightly micaceous; much jointed; cleavage irregular; full of casts of fossils.—*Upper Yarra.*

28.5. SHALE.—Same as No. 28.4.—*Upper Yarra.*

28.6. MUDSTONE.—Very argillaceous and soft; somewhat mottled by ferruginous stains.—*From the foundation of the Working Men's College, Latrobe Street, Melbourne.*

SHALES OF MESOZOIC AGE.

29.1. SHALE, COAL SHALE.—Soft and friable; represents a slightly indurated clay, with irregular cleavage; full of remains of fossil plants.—*Cape Patterson.*

29.2. SHALE, COAL SHALE.—Same as No. 29.1.—*Cape Patterson.*

29.3. SHALE, COAL SHALE.—Soft and friable; represents a slightly indurated clay; in parts somewhat arenaceous, and charged with carbonaceous matter; cleavage irregular.—*From near Coleraine.*

29.4. SHALE, COAL SHALE.—Soft and friable, but some portions much harder than others; slightly laminated; cleavage planes uneven; full of impressions of fossil plants (*Tæniopteris Daintreei*).—*Moe, Gippsland.*

29.5. SHALE, COAL SHALE.—Very soft and friable, and slightly arenaceous; much charged with carbonaceous matter and full of carbonised fossil-plant remains.—*Moe, Gippsland.*

29.6. SHALE, COAL SHALE.—Very soft and friable, and highly charged with carbonaceous matter; resembles brown coal.—*Moe, Gippsland.*

29.7. SHALE, COAL SHALE.—Strongly laminated and cleavable; highly carbonaceous.—*Great North-Western Co.'s shaft, Ballarat.*

CLAY-SLATES OF LOWER SILURIAN AGE.*

30.1. CLAY-SLATE.—Fissile, rather soft, with a faint satiny lustre.—*Red Jacket Claim, Ballarat.*

30.2. CLAY-SLATE.—Useful for roofing purposes; its fine dark purple colour renders it similar to the Welsh slates.—*Bendigo.*

30.3. CLAY-SLATE.—Thick-bedded and micaceous; cleavage very uneven; much traversed by joints; has the character of a strongly indurated shale.—*Moorabool River, between Steiglitz and Meredith.*

30.4. CLAY-SLATE.—Cleavage tolerably perfect; rather soft and full of ferruginous oval concretions of uniform size, which much resemble fossils, and are perhaps caused by metamorphic action.—*Kingower.*

30.5. CLAY-SLATE.—Cleavage somewhat regular and even; rather soft, and regularly and delicately banded; contains embedded cubical crystals of iron pyrites.—*Bendigo.*

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* In wall case No. 223, west end of gallery, will be found a collection of clay-slates from Bendigo, showing various forms of *graptolites.*

30.6. Clay-Slate.—Similar to No. 30.5.—*Bendigo.*

30.7. Clay Slate.—Cleavage even and perfect; well adapted for roofing purposes.—*Slate quarries, Meredith.*

30.8. Clay Slate.—Cleavage rather uneven; apparently thick-bedded; slightly concretionary, and in cross-fracture micaceous; has a somewhat metamorphic aspect.—*Maryborough.*

30.9. Clay-Slate.—Rather soft and dull earthy; cleavage nearly regular; full of impressions of various forms of *graptolites.—Lancefield, county of Bourke. Geological ¼ sheet* 5 *S.E.*

30.10. Clay-Slate.—Same as No. 30.9; cleavage more perfect.—*Lancefield, county of Bourke. Geological ¼ sheet* 5 *S.E.*

30.11. Clay-Slate.—Cleavage well-developed, and cleavage-planes tolerably even; looks suitable for roofing purposes but is too soft —*Bendigo.*

30.12. Clay-Slate.—Thick-bedded and somewhat arenaceous, enclosing apparently some bituminous or carbonaceous matter; cleavage very irregular and uneven; resembling an indurated mudstone.—*Loddon River.*

30.13. Clay-Slate.—Cleavage imperfect and uneven; rather soft; not applicable for roofing purposes.—*Bendigo.*

30.14. Clay-Slate.—Rather tough and hard; cleavage somewhat uneven, but might be suitable for roofing purposes. —*Bendigo.*

30.15. Clay-Slate.—Thick-bedded; cleavage uneven and imperfect; slightly arenaceous, and contains some carbonaceous matter; full of numerous species of *graptolites.—Near diorite-dyke, Tarilta. Geological ¼ sheet* 15 *N.E.*

30.16. Clay-Slate.—Rather soft, and cleavage fairly even; might be used for roofing purposes.—*Moorabool River, between Steiglitz and Meredith.*

30.17. Clay-Slate.—Rather soft, and cleaves unevenly.—*Yandoit.*

30.18. Clay-Slate.—Soft and friable; somewhat argillaceous and fissile; has the character of a slaty shale; shows on the face of a joint small patches of "blue carbonate of copper." —*Lerderberg River.*

30.19. Clay-Slate.—Soft, friable and rather fissile, resembling slaty shale.—*Yandoit.*

30.20. Clay-Slate.—Cleaves somewhat evenly, but is too soft for roofing purposes.—*Bendigo.*

30.21. Clay-Slate.—Very ferruginous, and hard enough for roofing purposes, but cleaves unevenly and is apparently much jointed.—*Bendigo.*

30.22. CLAY-SLATE.—Cleavage imperfect, and planes of earthy, dull aspect; ferruginous, and full of various forms of *graptolites.—Section 29 Spring Plains. Geological ¼ sheet* 13 *N.E.*

30.23. CLAY-SLATE.—Similar to 30.22, only more ferruginous.—*Spring Plains.*

30.24. CLAY-SLATE.—Hard, micaceous, and slightly arenaceous; cleaves unevenly and shows ferruginous bands of shades of brown colour.—*Talbot.*

30.25. CLAY-SLATE.—Much jointed, rather hard, and cleavage very uneven.—*From near Newstead.*

30.26. CLAY-SLATE.—Cleavage strong and even; rather hard; might be used for roofing purposes.—*Buckland's Gap, near Beechworth.*

30.27. CLAY-SLATE.—Hard and of somewhat uncertain cleavage; has partly a bronzy lustre, evidently derived from the presence of large crystals of iron pyrites.—*Bendigo.*

30.28. CLAY-SLATE.—Shows a weak satiny lustre; cleavage uneven; rather soft.—*Bendigo.*

30.29. CLAY-SLATE.—Indurated and of a cherty appearance; fracture weakly chonchoidal; traversed by small irregular veins of quartz.—*Garden Gully, Bendigo.*

30.30. CLAY-SLATE.—Hard, with a good even cleavage; might be suitable for roofing purposes.—*Omeo, county Benambra.*

30.31. CLAY-SLATE.—Strong and regular cleavage; fairly hard; appears well suited as a roofing slate.—*Daylesford.*

30.32. CLAY-SLATE.—A granular-looking grey slate, with weak satiny lustre; rather soft and fissile.—*Horseshoe Gap, Two-mile Creek, near Beechworth.*

30.33. CLAY-SLATE.—Rather thick-bedded, soft, argillaceous and slightly micaceous.—*Section* 26, *Spring Plains, Stone-Jug Creek.*

30.34. CLAY-SLATE.—Rather soft; argillaceous and minutely porous; cleavage nearly perfect and even; slightly fissile; full of various forms of *graptolites.—Shepherd's Claim, Christmas Reef, Bendigo.*

30.35. CLAY-SLATE.—Fissile, quartzose, and micaceous; ferruginous bands produce a concretionary appearance.—*Dunolly.*

30.36. CLAY-SLATE.—Soft and highly argillaceous, in part quite steatitic; red ferruginous bands produce a peculiar concretionary aspect; cleaves evenly, but rock apparently much jointed.—*Town Reef, Castlemaine.*

30.37. CLAY-SLATE. — Hard, ferruginous, with extremely uneven cleavage; traversed by ferruginous quartz-veins.—*From close to a quartz reef, Talbot.*

30.38. CLAY-SLATE, BLACK LODE-SLATE.—Fine-grained grey sandstone (?) in contact with the slate; the former rather concretionary, the latter slightly micaceous; both impregnated with iron pyrites and traversed by quartz-veins.—*From a quartz reef, Clunes.*

30.39. CLAY-SLATE, LODE-SLATE, GANGUE-SLATE.—Fissile, but cleaves very irregularly; shows a weak satiny lustre; in parts impregnated with iron pyrites, and traversed by quartz-veins.—*From a quartz reef, Clunes.*

30.40. CLAY-SLATE, LODE-SLATE, GANGUE-SLATE.—Similar to foregoing, but slate black and carbonaceous; impregnated with iron pyrites, and traversed by quartz-veins.—*From a quartz reef, Clunes.*

30.41. JASPEROID SLATE.—Slate altered into a green siliceous jasper, traversed by irregular ferruginous bands; has no apparent cleavage.—*Neighbourhood of Foster, Gippsland.*

CLAY-SLATES OF UPPER SILURIAN AGE.

31.1. CLAY-SLATE. — Traversed by hard, fine-granular quartzose bands; cleavage very uneven; slightly concretionary.— *Walhalla mine, Walhalla, Stringer's Creek.*

31.2. CLAY-SLATE.—Cleavage rather even and regular, coinciding with bedding planes; might be useful for roofing purposes.— *Walhalla mine, Walhalla, Stringer's Creek.*

31.3 CLAY-SLATE.—Cleavage imperfect, coinciding with bedding planes; not applicable for roofing purposes.—*Mouth of tunnel of Great Extended Walhalla Company, Thomson River, near Walhalla.*

31.4.—CLAY-SLATE.—Highly micaceous and somewhat arenaceous; cleavage uneven; encloses remains of fossil plants (*fucoids*); occurs interstratified with No. 31.3.—*Mouth of tunnel of Great Extended Walhalla Company, Thomson River, near Walhalla.*

31.5. CLAY-SLATE. — Very argillaceous and apparently rather thick-bedded; cleavage very uneven; full of fossil-plant impressions; approaches an indurated shale in character. —*Morris's antimony claim, east of Heathcote.*

31.6. CLAY-SLATE.—Similar to No. 31.5, but not so rich in fossil-plant impressions. — *Wall-rock of the Diamond Reef, near Nillumbik.*

31.7. CLAY-SLATE.—Somewhat siliceous, and harder and of darker colour than No. 31.6.—*Wall-rock of the Diamond Reef, near Nillumbik.*

31.8. CLAY-SLATE.—Thick-bedded, micaceous, and slightly arenaceous; cleavage planes mottled and uneven.—*Upper Yarra.*

31.9. CLAY-SLATE.—Same as No. 31.8.—*Upper Yarra.*

SAND, CLAYS, ETC., OF CAINOZOIC AGE.

32.1. SAND (26 samples).—The greater number consisting of pure white quartz, the others containing stronger or weaker admixtures of hydrous oxide of iron. The former might be applicable for the manufacture of glass, etc.—*From the older gold-drift of different localities of the Beechworth goldfield.*

32.2. TIN-SAND (3 samples).—Grains of cassiterite, with small admixtures of grains of menaccanite (titaniferous iron), zircon, quartz, etc.—*Beechworth goldfield.*

32.3. TITANIFEROUS IRON-SAND.—Contains a small percentage of tin-ore.—*Yackandandah.*

32.4. SILICEOUS PEBBLES.—*Waratah Bay.*

32.5. CLAY.—Encloses carbonaceous particles, and contains some infusorial earth. It occurs overlying the ordinary quartz pebble cement, and underlying the newer basalt. A tunnel has been driven into it, from which issues a good spring of mineral water. Gold was not found in it.—*Section* 75, *Redesdale, banks of Campaspe River. Geological ¼ sheet* 13 *N.E.*

32.6. CLAY.—Of steatitic character, resembling "fuller's earth."—*Clifton Mineral Springs, near Geelong.*

CHEMICALLY-FORMED ROCKS.

LIMESTONES OF UPPER SILURIAN AGE.*

33.1. LIMESTONE.—Very finely crystallised-granular nearly dense portions, intermixed with more coarsely crystalline ones.—*Lilydale.*

33.2. LIMESTONE.—Very finely crystalline-granular and buff-coloured.—*Lilydale.*

33.3. LIMESTONE.—Grey; very finely crystalline-granular, with dendrites and yellow veins.—*Lilydale.*

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* Large slabs of limestone from Waratah Bay, near Toongabbie, and Lilydale will be seen against the west end wall of gallery.

33.4. LIMESTONE, CALC-SINTER.—Very white and porous; of a coralloidal structure.—*Lilydale.*

33.5. LIMESTONE, MARBLE. — Micro-crystalline, with a somewhat slaty texture.—*Limestone Creek.*

33.6. LIMESTONE, MARBLE.—Light grey; finely crystalline-granular; suitable for ornamental purposes.—*Limestone Creek.*

33.7. LIMESTONE, MARBLE. — Very finely crystalline-granular portions, intermixed with more coarsely crystalline ones; mottled red and white; a very ornamental stone.—*Limestone Creek.*

33.8. LIMESTONE, MARBLE BRECCIA.—Very coarsely crystalline-granular base, enclosing variously coloured denser fragments.—*Limestone Creek.*

33.9. LIMESTONE, CALCITE.—Crystallised in large pure white rhombohedrons.—*From a vein in trap breaking through silurian rocks, Dookie.*

LIMESTONES OF UPPER PALÆOZOIC AGE.

34.1. LIMESTONE.—Finely crystalline-granular, with occasional larger crystalline grains and small irregular veins of calcite; fossiliferous —*Mount Tambo, North Gippsland.*

34.2. LIMESTONE. — Very finely crystalline-granular, with seams of calcite.—*Buchan Lead Mine, South-east Gippsland.*

34.3. LIMESTONE.—Same as No. 34.2.—*Buchan Lead Mine, South-east Gippsland.*

34.4. LIMESTONE.—Micro-crystalline-granular, densely filled with fossils (*spirifers*).—*Neighbourhood of Murrindale Lead Mine, Buchan, South-east Gippsland.*

34.5. LIMESTONE.—Same as No. 34.4.—*Neighbourhood of Murrindale Lead Mine, South-east Gippsland.*

34.6. LIMESTONE.—Coarsely crystalline-granular. Composition according to Mr. Newbery's analysis:—

Iron and alumina	2.92
Carbonate of lime	95.55
Magnesia	trace
Silica and insoluble matter	1.53
	100.00

—*Burnt Creek, near Mansfield.*

34.7. LIMESTONE.—Similar to No. 34.6; only contains a vein of calcite.—*Burnt Creek, near Mansfield.*

34.8. LIMESTONE.—Very dense; contains numerous fossils. —*Murrindale, Gippsland.*

34.9. LIMESTONE.—Micro-crystalline-granular; densely filled with fossils; has a weathered appearance.—*Murrindale, Gippsland.*

34.10. LIMESTONE.—Finely crystalline-granular, with fossils replaced by calcite; slightly veined.—*Murrindale, Gippsland*

34.11. MAGNESIAN LIMESTONE, DOLOMITE.—Rather coarsely crystalline-granular.— *Back Creek, Buchan, Gippsland.*

LIMESTONES OF MESOZOIC AGE.

35.1. LIMESTONE.—Dense and argillaceous, and showing a tendency to "cone-in-cone" structure.—*From a half-mile south of Den Hills, near Muntham.*

35.2. LIMESTONE.—Very fine-grained, white and slightly porous.—*Grey River, County of Polwarth.*

LIMESTONES OF CAINOZOIC AGE.

36.1. SHELL-LIMESTONE, SHELL-MARBLE.—Almost entirely composed of fossil shells; slightly siliceous, very dense and hard. Might be useful for chimney pieces and other ornamental purposes, as it takes a good polish and is not difficult to work. Its quantity is, however, limited to irregular bands of about two feet in thickness, which occur intercalated in the upper part of the older basalt.—*Maude, about two miles south along the east and west sides of the valley of the Moorabool River. Geological ¼ sheet* 19 *S. W.*

36.2. SHELL-LIMESTONE, SHELL-MARBLE.—Same as foregoing. —*Moorabool River, near Maude.*

36.3. SHELL-LIMESTONE, SHELL-MARBLE. —Same as No. 36.1.—*Moorabool River, near Maude.*

36.4. LIMESTONE.—Very porous and friable; almost entirely composed of fragments of fossils (*Echini* and *Polyzoa*). Makes a good building-lime.—*Hope's Hill, Moorabool River, near Geelong. Geological ¼ sheet* 24 *S.E.*

36.5. LIMESTONE.—Same as foregoing.—*Hope's Hill, Moorabool River.*

The banks on either side of the River Moorabool, in the neighbourhood of Hope's Hill, are occupied by this limestone, which would afford excellent lime for building purposes.

36.6. SEPTARIAN LIMESTONE.—Very finely crystalline-granular, cavernous, slightly siliceous, and very argillaceous; contains *polyzoa.*—*Schnapper Point.*

An analysis of this limestone by the late Mr. Charles S. Wood gave as under:—

Carbonate of lime	82·012
„ magnesia	1·506
„ iron	3·472
Clay and sand	10·427
Soluble silica	0·720
Water	1·809
Organic matter and loss	0·054
	100·000

Mr. Selwyn's Note.—This limestone is probably of upper eocene age, and is a sample of the stone used by the late Schnapper Point Cement Company. The percentage of siliceous matter is too low for a good hydraulic lime, but its power of hardening under water would be considerably increased by the addition of clayey matter in such proportion as to raise the quantity of silica to about 25 per cent.

36.7. LIMESTONE.—Coarsely crystalline-granular; very rich in fossils.—*Beach between Brighton and Mordialloc.*

36.8. LIMESTONE.—Coarsely granular, very compact and slightly siliceous.—*Keilor. Geological ¼ sheet* 1 *N. W.*

36.9. LIMESTONE.—Coarsely granular, and looking in part brecciated; contains fossils sparingly distributed through it.—*Keilor. Geological ¼ sheet* 1 *N. W.*

36.10. LIMESTONE.—Slightely porous, otherwise similar to foregoing.—*Keilor. Geological ¼ sheet* 1 *N. W.*

36.11. LIMESTONE.—Very porous and friable; composed almost entirely of fossils; slightly ferruginous.—*Leigh Creek, County Grant.*

36.12. LIMESTONE.—Resembles No. 36.11, only more compact.—*Warrnambool.*

36.13. LIMESTONE.—Hard and slightly porous; full of fossils.—*Waurn Ponds, near Geelong.*

36.14. LIMESTONE.—Coarsely granular, rather porous, and earthy.—*Geelong.*

36.15. FRESHWATER LIMESTONE.—Rather earthy and argillaceous; rests on greenstone (gabbro).—*Barrabool Hills, near Geelong.*

36.16. LIMESTONE.—Of a somewhat clayey appearance; shows a concretionary structure.—*Baringhup.*

36.17. LIMESTONE.—Rather fine-granular, hard, and siliceous. -*Bat Ridge, Portland.*

36.18. LIMESTONE.—Rather earthy; consists of a base with a number of ferruginous pea-like sphericles, giving it a pisolitic character.—*Neighbourhood of Keilor.*

36.19. FRESHWATER LIMESTONE.—Somewhat earthy; contains much carbonate of magnesia; represents a product of the decomposition of basalt.—*Malmsbury.*

36.20. FRESHWATER LIMESTONE.—Very dense and hard, siliceous, and slightly argillaceous. An analysis by Mr. J. Cosmo Newbery gave:—

Carbonate of lime	88·38
„ magnesia	0·76
„ iron	0·51
Silica and clay	7·02
	96·67

—*Duck Ponds. Geological ¼ sheets* 19 *S.E. and* 24 *N.E.*

Mr. Selwyn's Note.—This limestone yields a good building lime, and may be made into cement by being mixed with a proper proportion of clayey matter. The best adapted for this purpose is a decomposed basalt from the older volcanic rocks. Higher up the Duck Ponds Creek wells have been sunk showing the following section:—

Soft sandy loam	4 feet
Rubbly limestone	6 „
Compact limestone (containing *Planorbis* and *Lymnea*)	4 „
Soft rubbly limestone	6 „
Calcareous sandy clay	4 „
Soft decomposed basalt	2 „

The water struck is brackish. Bones of kangaroo, wombat, etc., have been found in this limestone.

36.21. FRESHWATER LIMESTONE.—An intimate mixture of very dense and granular-crystalline portions.—*Duck Ponds, near Geelong. Geological ¼ sheets* 19 *S.E. and* 24 *N.E.*

36.22. FRESHWATER LIMESTONE.—Very dense, nearly flinty in texture; rather siliceous.—*Duck Ponds, near Geelong.*

36.23. FRESHWATER LIMESTONE.—Argillaceous and of brecciated appearance.—*Geelong.*

36.24. FRESHWATER LIMESTONE.—A rather earthy-looking limestone-base, traversed irregularly by white and grey banded veins of very finely crystalline-granular limestone, which impart to the specimen a resemblance to fractured amygdules of chalcedony; slightly cavernous.—*Geelong.*

36.25. FRESHWATER LIMESTONE, LIMESTONE CONGLOMERATE.—Consists of rounded, calcareous concretions and small quartz-grains, cemented by dense, grey freshwater limestone; rests on basalt-lava.—*From near Lake Boloke Hotel, Geelong District.*

36.26. FRESHWATER LIMESTONE.—Finely crystallinelar; faintly banded. This is the so-called "Geelong marble." An analysis by Mr. J. Cosmo Newbery gave the following results:—

Carbonate of lime	89·50
" magnesia	0·43
" iron	0·72
Silica and clay	6·84
	97·49

—*Galena Point, Geelong. Geological ¼ sheet 24 S.E.*
The following section is shown at Galena Point:—

Marly clay	7 feet
Ferruginous sandy clay	10 feet
Thin-bedded limestone	3 ft. 6 in.
Compact limestone	7 feet
Rubbly thin-bedded poor limestone	6 feet

This last contains abundance of miocene fossils.

36.27. FRESHWATER LIMESTONE.—Very dense; in part brecciated and cavernous; slightly siliceous; the walls of some of the cavities are coated with crystallised *calcite.—Limestone Creek, near Mount Franklin.*

36.28. FRESHWATER LIMESTONE.—Rather fine-granular; shows traces of fossils.—*Duck Ponds, near Geelong.*

36.29. FRESHWATER LIMESTONE.—Hard, dense, and in part cavernous; slightly argillaceous.—*Limeburners' Point, near Geelong.*

36.30. FRESHWATER MAGNESIAN LIMESTONE.—Partly hard, compact, and porcellaneous, with a chonchoidal fracture; remainder softer and granular.—*Neighbourhood of Geelong.*

36.31. FRESHWATER LIMESTONE.—Rather fine-granular and argillaceous; contains grains of quartz.—*Brighton Beach.*

36.32. LIMESTONE.—Ferruginous, porous, and granular; contains remnants of fossil bones.—*From a cave at Mount Burr, Reedy Creek.*

36.33. LIMESTONE, CALCITE.—Coarsely crystallised.—*From above the Cave, Cave Farm, Heywood.*

ORGANIC ROCKS OF MESOZOIC AGE.

37.1. COAL.—Of rather poor quality and rather thinly laminated; said to come from a seam three feet thick.—*Traralgon, South Gippsland.*

37.2. COAL.—Impure, of a rather shaly character; hard and much laminated. Specimens of this coal analysed by Mr. Cosmo Newbery gave—

1. Raw Mineral.	
Carbon	66·74
Hydrogen	4·83
Oxygen and nitrogen...	5·20
Sulphur	1·65
Ash	21·58
	100·00

2. Dried Mineral.	
Volatile matter ...	35·74
Fixed carbon	42·68
Ash	21·58
	100·00

The raw mineral contains about 4 per cent. of hygroscopic water.—*Traralgon, South Gippsland.*

37.3. COAL.—Of inferior quality, on account of its being much fractured and traversed by small veins of calcite.—*From near Moe, Gippsland.*

37.4. COAL.—Of good quality, but very much fractured and laminated; would deteriorate on exposure to the atmosphere. An analysis by Mr. Cosmo Newbery gave the following results:—

Water	7·3
Volatile hydrocarbon	29·2
Fixed carbon	59·2
Ash	4·3
	100·0

—*From the seam at Kilcunda, six-and-a-half miles from Griffith's Point.*

37.5. COAL.—Of good quality, but much fractured and laminated; would probably deteriorate on exposure to the atmosphere. An analysis of the late Mr. Charles Wood gave:—

Volatile matter...	28·8
Fixed carbon	56·4
Hygroscopic water	4·0
Ash	10·8
	100·0

—*From the so-called "Queen Vein," 3 to 4 feet thick, Cape Patterson.*

ORGANIC ROCKS OF CAINOZOIC AGE.*

38.1. LIGNITE, WOODY BROWN COAL.—Structure of the wood well preserved.—*From the older gold-drift of the Lord Malmsbury claim, near Malmsbury.*

38.2. BROWN COAL, LIGNITE.—Earthy, yet compact; encloses recognisable plant-remains and thin seams of a jetty character.—*Lal-Lal, near Ballarat.*

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* See also brown coal in case No. 200, ground floor.

38.3. BROWN COAL, LIGNITE.—Earthy, and irregularly laminated; full of particles of a fossil yellow resin (*middletonite ?*). —*Lal-Lal.*

38.4. LIGNITE, WOODY BROWN COAL.—Represents portions of a tree (*conifer*) with patches of the bark adhering.—*Lal-Lal.*

NOTE.—The deposit from which Nos. 38.2, 38.3, and 38.4 are derived has, by one of several shafts sunk upon it, been proved to be about 115 feet in thickness in apparently its thickest part, the other shafts and a number of bores having shown it to thin out round this point. It is here covered from the surface downward by about 73 feet of sand, clay, and gravel, in alternating layers, and—resting immediately on it—by three feet of a fine fire-clay. As regards its general character, it consists of an irregular mixture of brown and brownish-black, earthy, bituminous coal—real *brown coal*—with *lignite*; *i.e.*, portions composed of branches, trunks, stumps, and roots of trees (*coniferæ*), which still exhibit a nearly perfect woody structure, and are so tough as mostly to require the use of a saw and axe for their removal. Occasionally thin, rather scattered seams of *jet* are met with; also narrow, lenticular patches, and small roundish pieces of two kinds of resin. One of these, semi-transparent, of a honey-yellow, or reddish-brown colour, very brittle, resembles *middletonite*; the other is greyish-white, opaque, earthy, and somewhat flexible and elastic when fresh from the mine, but becomes hard and brittle afterwards; it most nearly resembles *retinite* from the Bovey coal. Both these resins burn easily, and emiting, with much smoke, fine fragrant odours, leave shining carbonaceous residues. Only a few thin clay-seams have been met with in the lower part of this enormous brown coal deposit, and iron pyrites is, so far as examination goes, very sparingly distributed through it. The following are the results of some of the analyses made of the brown coal:—

—	I.	II.	III.	IV.	V.	VI.
Fixed carbon	29·3	27·9	26·7	39·5	39·0	40·0
Volatile matter	20·7	22·1	23·3	20·0	20·4	35·0
Hygroscopic water	48·7	48·7	48·7	40·0	40·0	23·0
Ash	1·3	1·3	1·3	0·6	0·6	2·0
	100·0	100·0	100·0	100·0	100·0	100·0

I. to V. analyses by the late Mr. Charles Wood, analyst to the former Geological Survey; I. to III. of the brownish-black, earthy variety; IV. and V. of the woody variety. VI. analysis made by Mr. Rule in the Technological Museum laboratory, of thoroughly air-dry, earthy coal.

38.5. LIGNITE, WOODY BROWN COAL. — Rather earthy looking, but woody structure very evident.—*Lal-Lal, near Ballarat.*

38.6. BROWN COAL, LIGNITE.—Shows a dull black colour, and chonchoidal fracture, and is brittle. An analysis by Mr. Cosmo Newbery gave the following results:—

Fixed carbon	35·17	
Volatile matter	41·25	sulphur 2·72, on dried sample.
Water	17·73	
Ash	5·85	

—*Comes from a seam about* 55 *feet thick on Crossover Creek, North Gippsland.*

38.7. BROWN COAL, LIGNITE.—Earthy and compact; shows a tendency to cleavage along bedding planes.—*Cape Otway.*

38.8. BROWN COAL, LIGNITE.—Resembles No. 38.7, only more compact and contains patches and seams of a jetty nature. —*Cape Otway.*

38.9. INFUSORIAL EARTH, "KIESELGUHR."—Very soft and light—chalk-like; nearly wholly composed of the shells of *diatomaceæ;* might be utilised for the manufacture of "water-glass," and as an absorbent for the nitro-glycerine explosives —"dynamite" and "lithofracteur."—*From a deposit several feet in thickness, near Amherst.*

38.10. INFUSORIAL EARTH.—Soft and slightly argillaceous. —*Lancefield.*

38.11. INFUSORIAL EARTH.—Compact and rather hard; rendered impure by carbonaceous clayey matter; has a stratified appearance.—*Sebastopol.*

FERGUSSON & MITCHELL LIMITED,
PRINTERS,
56-62 ELIZABETH STREET, MELBOURNE.

MINERAL MAP

AND

GENERAL STATISTICS

OF

NEW SOUTH WALES,

AUSTRALIA.

SYDNEY:
THOMAS RICHARDS, GOVERNMENT PRINTER, PHILLIP-STREET.

1876.

[*Price* 1*s.*]

AUSTRALIA.

NEW SOUTH WALES.

In the subdivision of the territory of Australia, a different principle has prevailed to that which has obtained in the United States. Instead of there being many separate States, some of them of small size, and some wholly inland, the mainland of Australia has hitherto been divided into a few large Colonies or Provinces, each of which has its coast-line and its metropolitan port. The less settled portion of Australia will doubtless hereafter be further subdivided, but the older Colonies may be considered as having their limits determined The Australian Colonies will therefore separately be larger communities than any of the States of America—a geographical difference that may involve important political differences

New South Wales once included the territory of the Colonies of South Australia, Victoria, and Queensland. Its present reduced area—not likely to be further diminished—is nearly equal to the united areas of North and South Carolina, Tennessee, Mississippi, Alabama, Georgia, and Florida, and its coast-line is about the distance from Cape Sable to Cape Fear

Its main export arises from the primitive industry of pastoral life. This is due to the fact that the inland districts are so easily accessible—that fine wool is so valuable a product—that it is procured with so little labour, and that the soil and climate are so favourable to its production. In its early years, therefore, the Colony has enjoyed the advantage of acquiring great wealth on easy terms, and a substantial basis of prosperity is thus laid, supported by which other industries are arising. In comparison with its population New South Wales is a wealthy and wealth-producing community, its export of wool and gold alone being worth, last year, £6,000,000, for a population of about 600,000. It occupies at the present period of its history a singularly advantageous point of departure for a magnificent future. Its ultimate greatness is assured, and it offers great attractions to those who would contribute towards the realization of that destiny.

NEW SOUTH WALES, AUSTRALIA.

ADVANTAGES OF NEW SOUTH WALES AS A HOME FOR THE EMIGRANT.

1. There is ready employment for all classes of laborers and artisans, at much higher wages than are given to the same classes of labor in England. In most of the trades the working day is limited to eight hours.

2. The cost of living for the masses of the people is cheaper here than in Europe or America. The labouring classes throughout the Colony live as comfortably as the middle classes in Europe.

3. Capital intelligently directed finds ready investment, either in trade, agriculture, mining, or the public stock, at higher rates than in Europe, and with good security.

4. There is an area of nearly 200,000,000 acres of public lands, two-thirds of which are occupied by the squatters on short leases, but all of which, with the exception of proper public reserves, are open to the emigrant to select from, wherever he pleases, and on terms within reach of the poorest; and a certain road to competency, if he be healthy, prudent, and industrious.

5. The soil and climate are adapted to a great variety of produce, at a moderate expenditure of labour and capital; and, cultivated with the ordinary skill, will yield excellent returns.

6. Our mineral resources can be surpassed by few other countries. The gold deposits are spread over a large area, and have proved as rich as anything hitherto known in the history of mining. The coal deposits are practically inexhaustible, and iron, lead, copper, tin, kerosene shale, and other mineral treasures abound.

7. For merchants and tradesmen no fairer field than Sydney could be presented. With its position on the eastern seaboard, with the Southern Islands, San Francisco, and the whole American Continent, right opposite,—with a harbour for shipping unrivalled in the World, and a vast trade already established, it cannot fail to secure the chief share of the commerce of the Pacific.

8. No finer climate can be desired, combining in its variety the mild warmth of the coast, the invigorating air of the mountains, and the dry atmosphere of the interior.

9. All the chief districts are easy of access by river, road, or railway, and the rates of traffic are low.

10. All this may be enjoyed among a people whose whole social life is so like Home that it is scarcely possible for the emigrant to feel like "a stranger in a strange land." The language, customs, habits, laws, literature, education, religion, are all thoroughly English; life and property secure; and government free.

11. Every immigrant, if sober, healthy, and industrious, is wealth to the Colony, and is made welcome at once—never received with jealousy and suspicion.

The steamships of the Pacific Mail Company run between San Francisco and Sydney monthly, and there are always steamships and sailing-vessels on the berth at London.

SOUTH WALES, AUSTRALIA.

LAND.

Alienated	acres	16,357,000
Unalienated	„	191,643,000
Under Cultivation	„	464,957
Enclosed	„	6,098,988

Principal Crops:—

		Extent.	Produce.	
Wheat	acres	166,911	2,148,394	bush.
Maize	„	118,436	3,618,436	„
Barley	„	3,984	69,053	„
Oats	„	17,974	293,135	„
Potatoes	„	13,604	38,564	tons.
Arrowroot	„	47	29,760	lbs.
Sugar Cane (productive)	„	4,087	15,355,648	„
Tobacco	„	540	6,069	cwt.
Vineyards	„	4,308	684,258 1,859 679	gals. Wine. „ Brandy. tons Fruit for Table use.

NEW SOUTH WALES, AUSTRALIA.

WAGES.

Carpenters	8/ to 10/	per diem	of 8 hours.
Smiths	10/ to 12/	„	„
Wheelwrights	8/ to 10/	„	„
Bricklayers	10/ to 11/	„	„
Masons	10/ to 12/	„	„

Lodging and Board for working men, 15/ per week.

	Per annum with board and lodging.		
	£		£
Farm Laborers	30	to	40
Shepherds	30	to	35
Females:—			
Cooks (plain)	30	to	40
Housemaids	26	to	30
Laundresses	30	to	40
Nursemaids	20	to	26
General House Servants	26	to	30
Farm House Servants	26		
Dairywomen			

PROVISIONS.—1874.

Wheat, per bushel	5/6	to 6/6
Bread, per lb.	/1½	to /2
Flour, „	/1¼	to /1½
Rice, „	/2¾	to /3
Tea, „	1/2	to 2/6
Sugar, „	/3½	to /4½
Coffee, „	1/4	
Meat, fresh, per lb.	/3½	
„ salt, „	/3½	to /4½
Butter, fresh, „	1/7	
Butter, salt, per lb.	1/4	
Cheese, English, per lb.	1/6	to 1/8
„ Colonial „	/6	
Potatoes, per cwt.	4/	to 5/6
Wine, Colonial, per gal.	3/6	to 5/6
Beer, „ „	2/	
Candles, per lb.	/4½	
Kerosene Oil, per gal.	2/6	
Tobacco, per lb.	3/	to 3/7

CLOTHING.

Moleskin Jackets, each	8/	to 12/
„ Coats, „	12/	to 20/
Waistcoats, „	3/	to 5/
Moleskin Trousers, „	4/6	to 9/
Colored Shirts, „	1/6	to 4/6
Strong Boots, per pair	5/9	to 6/
Socks, „	/10	
Handkerchiefs	/4½	to /8
Straw Hats	2/6	to 3/6
Print Dresses	7/6	to 12/6
Flannel Petticoats	3/6	to 8/
Calico „	4/	to 8/
Flannel, per yard	2/	
Calico, „	/8	to /9
Blankets, per pair	12/6	to 20/
Sheeting, Calico	1/6	to 2/6

NEW SOUTH WALES,

ITS

PROGRESS AND RESOURCES.

BY AUTHORITY OF THE GOVERNMENT.

SYDNEY, AUSTRALIA.

[illegible]

[illegible]

NEW SOUTH WALES, Australia

ITS

PROGRESS AND RESOURCES.

BY AUTHORITY OF THE COMMISSIONERS.

ADVANCE AUSTRALIA!

SYDNEY: THOMAS RICHARDS, GOVERNMENT PRINTER.

1876.

Philadelphia International Exhibition of 1876.

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NEW SOUTH WALES.

Settlement, Position, and Extent.

DISCOVERED by Captain Cook in 1770, and first settled in 1788, the real history of New South Wales begins with the 19th century, at about which time the introduction of Merino sheep—mainly due to the enterprise of Captain Macarthur—laid the basis of Australian commerce. In 1851 the southern districts were formed into the Colony of Victoria. In 1859 the northern districts were formed into the Colony of Queensland.

The boundaries are marked by 28° 10′ and 37° 28′ south latitude, and by the 141° east longitude. The total superficial area is estimated in round numbers at 200,000,000 acres. The coast line from Point Danger to Cape Howe is about 700 miles long. The extreme breadth is about 760 miles.

Physical Aspect.

There is great diversity of physical aspect in such a vast extent of country. At a distance varying from 25 to 120 miles, from the seaboard, a range of mountains, from 3,000 feet to 7,000 feet in height, stretches from north to south, throwing out spurs in every direction. This mountainous region forms the watershed of the country. Numerous streams flow down the eastern slopes into the sea, while the large rivers, Darling, Lachlan, Murrumbidgee, and Murray, with their tributaries, drain the western slopes. The coast-line is indented with fine harbours—one of them, Port Jackson, unsurpassed in the world.

Natural Divisions of the Country.

The natural great divisions of the country, are the eastern seaboard territory, the central range, and the western plains. The seaboard districts undulate with hill and valley, and possess on the alluvial flats the richest soil, adapted to every kind of cultivation. Much of this portion rests on a vast basin of coal. The central division is rich in minerals. No sooner are we off the coal areas than we are in a region in which are tracts abounding with gold, copper, lead, tin, and other minerals. The extensive plains in the interior, forming the third great natural division, are specially adapted for pastoral pursuits. Millions of sheep and cattle feed there on the natural grasses of the country.

Climate and Health.

Situated in the temperate zone, with wide plains in the interior with ranges of lofty hills, and with its shores washed by the Pacific, the climate of

New South Wales approximates generally to that of southern Europe. There are all varieties of climate, however, to be met with—from frost and snow for a great part of the year on the higher ranges in the south, to a tropical though dry heat in the interior. Along the sea coast the climate is pretty uniform. The range of the thermometer is much less than in any country within the same parallels of latitude in the northern hemisphere. The European constitution readily adapts itself to the climate. The air is clear, the light brilliant, the sky for a great part of the year almost cloudless, and the nights most enjoyable. In vital statistics the colony compares favourably with most parts of the world, and, not seldom, instances of great longevity are brought to light.

Increase of Population.

The progress of the population may be seen from the following figures:—

In 1841 there were 149,669.
In 1851 „ „ 197,168, after giving up 68,335 to Victoria.
In 1861 „ „ 358,278, after giving up 25,000 to Queensland.
In 1871 „ „ 519,182.
In 1874 „ „ 584,278.

At present the population is over 600,000.

The number is steadily increasing at the rate of 1,200 annually for every 30,000 of the inhabitants. But in such a vast country, abounding in wealth and resources, there is room for a population of many millions.

Roads and Railways.

More than 10,000 miles of road are open, affording free intercommunication with every part of the country. More than £2,500,000 have been spent in ten years on common roads alone, and the work of still further opening up the country is annually going on. Mail coaches run through every district.

Railways were first commenced in New South Wales by a private company. In 1855 the Government obtained an Act, which enabled it to purchase the railways and plant of the company, and railway construction has been carried on by Government ever since. The existence of the great central range delayed the progress of construction by presenting great engineering difficulties, but these have been overcome, and lines now cross the range north, south, and west. The Great Northern line starts from Newcastle, and has been opened for more than 120 miles. It is intended to connect this line with Queensland on the north and Sydney on the south, the distance to the latter being about seventy miles. The Great Western and the Great Southern lines both start from Sydney. The former has been finished to Bathurst, the capital of the west, a distance of over 140 miles, and will probably be carried to the river Darling. The latter through Goulburn has reached Gunning, a distance of 165 miles, and will probably before long be extended to the borders of Victoria and South Australia. The works are delayed for want of labor. Trial surveys have been completed for many miles south, west, and north. The line across the Blue Mountains to Bathurst ascends to a height of 3,500 feet, and descends by means of zig-zags both massive and ingenious. The rates of carriage are generally lower than those of any of the other Australian colonies. Agricultural produce, once carried at 6d. a ton per mile, is now carried at 1½d. In all there are nearly 450 miles of railway open. As the lines all belong to the State, they promise to form an ever-increasing source of revenue, and lessening of taxation to the public. In 1874, on a total of 400 miles open, the entire earnings were £536,575, and the working expenses £257,703, yielding a net return of £278,872, or about 4 per cent. on the cost of construction.

Post Offices and Telegraphs.

Wherever there is a township there is a post office, and every village in the farthest interior has mail communication. The postage on letters within Australia is 2d. per ½ oz., while all newspapers are carried *free.*

There are three separate ocean mails for parts beyond Australia made up every month, *viâ* Torres Straits, *viâ* Galle, and *viâ* San Francisco. The rate of postage to England is 6d. the half ounce.

Telegraph lines intersect the country in every direction. There were open in

	Stations.	Miles.
1874	115	7,449
1875	180	8,000

The number of messages sent were in 1874—570,326; and in the first half of 1875—331,362. Telegrams from all parts of the World are daily published in the newspapers.

Education.

Education is a department of the State. All schools supported by the State are under Government inspection, and the same course of secular instruction is adopted in all. The course includes reading, writing, arithmetic, grammar, geography, object lessons, singing, drawing, geometry, algebra, and Latin, with permission to teachers to produce, if possible, higher results. All the teachers are examined and certified. Every town and considerable village has its State Primary School, and itinerant teachers are appointed to visit the families of settlers scattered through the bush. The fee for tuition is a shilling a week, and where this cannot be met there is no charge.

The University of Sydney was established and endowed in 1851. Its guaranteed annual income from public funds is £5,000, and it has the power of granting degrees in arts, law, and medicine.

Provision is made for Affiliated Colleges of the four principal religious denominations, with the guarantee from public funds of half the cost of the buildings where the denominations have contributed the other half, and £500 per annum towards the salary of each Principal. Under these provisions three Affiliated Colleges have been erected.

Social Condition.

Nearly all the associations and institutions of European and American life—social, political, and religious—have their representatives in the Colony. Of Journals there are more than a hundred. Every considerable town, every interest, has its one or more papers published, once or oftener every week. There are Banks with branches in almost every township in the interior. Law holds its sway over all classes, and is purely and efficiently administered in all its branches and jurisdictions. Life and property are secure; the means of living easy and manifold; wages and profits high; education is generally diffused; and the comforts, elegancies, and amusements of life are varied and numerous.

Trade and Commerce.

New South Wales is advantageously situated for purposes of trade and commerce. She is not only the centre of the group of Australasian colonies and of the islands in the South Pacific, but looks out towards the western coast of the vast American Continent, and is within easy reach of the populous countries of Asia.

More than one-half of the Australian shipping is owned here. The inward and outward tonnage of 4,385 vessels engaged in the trade of the colony in 1874 was 1,990,894. In the ten years from 1864 to 1875 inclusive the seaboard trade of New South Wales amounted to—

	Imports.	Exports.
United Kingdom ...	£36,317,960 ...	£40,539,602
Intercolonial ...	40,498,152 ...	34,550,650
Foreign	10,413,061 ...	3,180,104
Totals	£87,229,173	£78,270,356

The total value of the trade in 1874 amounted to—Imports, £11,293,739; Exports, £12,345,603. Or in all £23,639,342, with a balance in favour of exports of £1,051,864. These figures exhibit an import trade of £19 16s., and an export trade of £21 12s. 9d. per head of the population, which is at the rate of more than double the import trade, and nearly quadruple the export trade of Great Britain, per head of the population, for the same year.

Of the foreign trade there was with

	Imports.	Exports.
The United States ...	£1,972,519 ...	£649,222
The S. Sea Islands ...	667,861 ...	896,255

The following table exhibits the increase of trade with population in successive periods:—

	Population.	Trade.	Per head.		
1831 ...	51,155 ...	£814,320 ...	£15	18	4
1841 ...	149,669 ...	3,551,385 ...	23	14	6
	Giving up Victoria,				
1851 ...	197,168 ...	3,360,843 ...	15	19	2
	Giving up Queensland,				
1861 ...	358,278 ...	11,986,394 ...	33	9	1
1871 ...	519,182 ...	20,854,540 ...	40	3	4
1874 ...	584,278 ...	23,639,342 ...	40	9	2

The revenue has likewise proportionately increased from £406,056 in 1851, to £4,126,303 in 1875. Of this amount about £1,000,000 was obtained from customs, and £90,000 from licenses. The land revenue amounted to more than £2,000,000, and the receipts from the national railways to more than £500,000. The revenue from taxation is officially given at £2 1s. 8d. per head of the population for 1874. The tariff, which is established for purposes of revenue only, is one of the simplest in Australia, free trade being the avowed policy of the colony.

Rivers and Harbours.

Besides the rivers which flow into the Pacific, and the mouths of which form harbours available for trade, there are several harbours along the coast. The coast line is well lighted from north to south, and large sums of money are annually spent in improvements connected with the harbours and rivers. Storm signals are placed on all the principal promontories, which, together with the sea-ports, are connected by means of the electric wire with Sydney. The following are the principal harbours:—

Trial Bay, midway between Sydney and Queensland, is an excellent shelter for all classes of ships during S. & S. E. gales.

Port Stephens, 25 miles north of Newcastle, runs into the country due west for about 14 miles, and has even a larger water area than Port Jackson.

Newcastle, at the mouth of the Hunter, is the great coal port of the Colony. Vessels of 2,000 tons burden can load there.

Broken Bay, 16 miles north of Sydney Heads, at the mouth of the Hawkesbury, is a fine harbour, with a bold entrance, but is inferior to Port Jackson in tho draught of water at the entrance.

Port Jackson, unsurpassed in the world, is separately described below.

Botany Bay, 8 miles south of Sydney, has an area of 20 square miles, but is shallow.

Jervis Bay, a large and sheltered bay in the south, is at present mainly resorted to as a harbour of refuge.

Twofold Bay, in the south, is 5 miles from east to west, and 3 miles broad.

Besides the above there are Wollongong, Kiama, Shoalhaven, Ulladulla, and Moruya, small harbours on the south-east coast, where breakwaters, wharfs, and jetties, adapted to the coasting trade, have been constructed.

Sydney and its Harbour.

The magnificent expanse of water called Port Jackson, with its lake-like scenery, stretching away for 8 or 10 miles inland, is one of the embellishments of the world. The bold coast fronting the Pacific is suddenly broken, and the giant cliffs form a portal to an estuary, with an enormous extent of shore line, capacious enough to shelter the navies of the world. So completely is the harbour shut in that, until an entrance is fairly effected, its capacity and safety cannot be conjectured. A vessel making the port sails in a few moments out of the long swell of the ocean into calm deep water, protected on every side by high lands. The elevated shore is broken into innumerable bays and inlets, extending inland for miles. Some of the bays form of themselves capacious harbours. The bosom of the whole is dotted over with picturesque islets, which form no impediment to navigation. The depth of water is sufficient for the largest class of ships afloat. The harbour of Port Jackson proper has an area of 9 square miles, Middle Harbour, one of its arms, 3 square miles, and the shore-line of the whole is 54 miles. From the Heads to the city the distance is 4 miles, beyond which the waters extend for 8 miles further. The breadth varies from three-quarters of a mile to 2 miles or more. There are nearly 5 miles of Government and private wharfs.

The greatest length of the city, including the suburbs, is nearly 4 miles north and south, and the greatest breadth about 3 miles east and west. There are more than 120 miles of streets, besides minor thoroughfares. The population, including the suburbs, is over 160,000, and the funds dispensed by the Corporation last year amounted to £180,000. The Botanic Gardens, Domain, Hyde Park, Prince Alfred Park (on which stands the Exhibition Building), Belmore Gardens, Victoria Park, and Moore Park with an area of 500 acres, furnish easily accessible and ornamental grounds for recreation.

Pastoral Wealth and Progress.

New South Wales has justly been reckoned a peculiarly pastoral country. Probably no other country in the world can show such advances in pastoral wealth and resources. Natural pastures, miles in extent, may be met with all over the colony, but especially in the western districts, where many varieties of the fattening salt bush flourish. The pastoral stock and holdings represent a capital of £40,000,000, which is annually largely increasing. The natural grasses alone are sufficient for the feed of the vast flocks and herds. The total area leased at less than three farthings an acre for pastoral purposes is nearly 150,000,000 acres. The "runs" vary in size from 5,000 acres to 100,000 acres, several adjacent blocks being often included in one holding. There are many men in the Colony who began life as simple shepherds who have realized wealth and affluence, while several of the "squatters" possess more than a hundred thousand sheep.

Live Stock.

The fine-woolled sheep of the colony came originally from the choicest flocks of France, Spain, and Saxony. In the process of acclimatisation there has been a very decided gain in the softness of the wool, and an improvement in its elasticity. The wool has increased in length, but diminished in density, so that the weight remains the same. The coarse-woolled sheep are chiefly depastured in the Coast districts, where they thrive better than the merinos. Three-year-old wethers of this breed weigh when killed from 160lbs. to 200lbs. each, but the fine-wooled merinos are of a smaller type and average about 50lbs. The average of lambing is 80 per cent., and an average clip is about 3lbs. of washed wool per sheep.

The principal breeds of horned cattle are Shorthorns, Herefords, and Devons. The finer specimens will compare with most in England. Agricultural societies hold yearly exhibitions of stock and produce in the chief districts of the Colony; and some specimens at the last Exhibition in Sydney fetched over 1,000 guineas each. Pleuro-pneumonia has at times proved very destructive; but foot and mouth disease, rinder pest, and other malignant diseases of cattle, are unknown in New South Wales.

All the best breeds of horses thrive here. Animals worth £20 here fetch an average of £80 in India. India draws from New South Wales remounts for cavalry regiments.

Llamas and alpacas have been naturalised, and there are several flocks of Angoras. The fleece forwarded to England has sold for 2s. 6d. a pound, and the clip weighs sometimes 6 lbs.

The following returns show the progress and resources of New South Wales in the matter of live stock :—

	Horses.	Horned cattle.	Sheep.	Pigs.
1851	116,397	1,375,257	7,396,895	65,510
1861	233,220	2,271,923	5,615,054	146,091
1871	304,100	2,014,888	16,278,697	213,193
1874	346,691	2,856,699	22,872,882	219,958

The export of wool was in

1851	15,269,317 lbs.
After giving up Queensland	
1861	12,745,891 „
1871	65,611,953 „
1874	75,156,924 „

In 1874 the value of pastoral exports, including wool, tallow, skins, salt and preserved meats, and live stock, exceeded six millions sterling. The value of the local consumption is in addition to this large amount.

It will be seen from the above returns how great is the annual increase in stock of all descriptions, and how eminently adapted to pastoral purposes are the vast interior plains of the Colony. Perhaps in no part of the World do animals thrive and fatten more readily, or with less cost to the breeder, than in Australia. On the great salt-bush plains, which are almost exclusively devoted to the rearing of stock, the breeder incurs no expense in providing fodder for the winter, the climate being so mild throughout the year. Water, the great want of central Australia, is now being retained at very considerable expense by the lessees or squatters on the dry and waterless but splendid grazing lands lying back from the rivers, and as these become utilised the increase in the flocks and herds of the Colony will continue in the same ratio as heretofore. As a proof of the very fattening qualities of the pasturage, it may be stated that both cattle and sheep, after travelling some ten or twelve hundred miles to market, are found to produce meat equal to that of any country in the World. Pedigree animals have been repeatedly imported from Great Britain, and year by year, as evidenced by the increasing number of stock exhibited at the Shows now held throughout the whole of the inland towns of the Colony, as well as at the Metropolitan Show in Sydney, it is plainly seen that not only in point of numbers but in quality is the live stock of the Colony progressing.

Agricultural Resources.

There are large tracts of rich soil which are adapted for profitable cultivation. The law offers every facility for the acquirement of land. Anyone, even minors if not under sixteen years of age, can take up land—the best available—from 40 acres to 640 acres, at 20s. an acre, of which a fourth is to be paid down, the remainder bearing 5 per cent. interest. Another 20s. an acre is to be expended on improvements (a term very liberally construed) during a period of three years, during which time the purchaser must also reside. Titles to land once registered under Torrens' Act can never be called in question. The operations of agriculture or husbandry are never suspended by winter, and crops of some sort or other may be produced in succession from January to December. The area of land taken up for cultivation increases every year. The number of holdings in 1874 was 35,131, and the area under cultivation was 464,967 acres. Many poor farmers who began with small holdings have attained to wealth and independence. More than 50,000 persons, or nearly a tenth of the entire population of the Colony, are connected with agricultural pursuits.

Cereals, Fruits, &c.

The best wheat-growing districts are to be found on the table-lands from 2,000 feet to 4,000 feet high. The price in Sydney averages between 5s. and 6s. per bushel.

Tobacco is grown chiefly in the northern coast districts and in the south-west. The quantity grown has varied very much from year to year; more than 1,500,000lbs. have been produced in one year.

Maize is raised throughout the coast districts as far south as the 36th parallel of latitude. The cultivation is easy, and the crop is soon ready. A failure is rarely known. The yield on the richer descriptions of land has been 120 bushels an acre for the first crop, and 65 bushels an acre afterwards. The average on the whole crop of the Colony in 1874 was 30 bushels an acre. The market price in Sydney is between 2s. and 3s. a bushel. Large quantities are annually exported.

Sugar-cane has only lately begun to be cultivated. In 1874 there were 8,540 acres under tillage, of which 4,087 acres produced 6,855 tons of sugar. The sugar growing districts are on the northern rivers. The heaviest yield has been nearly 60 tons of cane an acre, and even 90 tons have been obtained. An average yield is 35 tons, producing nearly 2½ tons of sugar, besides molasses. The sorghum or imphee, which has so much of saccharine matter, thrives well.

The *Grape Vine* finds a home in numerous districts, both north and south, and in the interior. All the finest European varieties are now to be found in the Colony. There are several large vineyards in operation. The yield of wine has averaged from 600 gallons to 700 gallons per acre, though certain kinds of grapes have produced over 1,000 gallons per acre.

All the *fruits* of northern and southern Europe are grown with success. There are orange groves as magnificent as may be seen in Spain or Portugal. As many as 10,000 oranges have been obtained from individual trees. Oranges are largely exported to the neighbouring Colonies, and many proprietors of orangeries who began life in a very small way have reaped a fortune. The retail price of common varieties in Sydney averages a shilling a dozen. The olive, caper, fig, strawberry, raspberry, gooseberry, currant, custard-apple, guava, banana, edible nuts, almonds, passion-fruit, loquat, quince, plum, nectarine, pear, apple, and peach, all thrive.

The potato thrives well, and the yield is large. Barley, oats, &c., are grown chiefly for fodder. Lucerne hay may be cut from four to six times in the year in favorable seasons on the alluvial flats. Mangold-wurzel, turnips, and pumpkins are used for feeding only the very choicest cattle, native grasses being sufficient for the rest. Arrowroot thrives; otton succeeds well on the northern rivers. The bark of several indigenous acacias is used for tanning purposes. The rheea (or grass-cloth plant of China) and the New Zealand flax are grown easily. The mulberry tree thrives, and the finest varieties of the silkworm have been introduced with success.

Mineral Wealth—Gold.

New South Wales abounds in minerals. According to competent authorities, the auriferous districts of this colony are far larger than those of any other in Australia, and as rich as the richest, if not more so. Up to 1871 only alluvial washings were carried on, and the wealth lying in quartz reefs was comparatively neglected. And yet, besides coining millions of pounds sterling in her mint, she exported gold to the value of £40,095,823. There were then upwards of 16,000 miners engaged. Since the veins have been worked and quartz-mining has come into operation, there has been an extension in this direction and the results have, in a few instances, been unexpectedly rich. The Emu Creek gold-field alone sent by escort to Sydney, from October, 1866, to September, 1871, 182,061 ounces of gold. From two mines on Hawkins' Hill the yield in six months was gold to the value of £162,850, after paying escort fees and mint charges.

The proclaimed Gold Fields extend with short intervals the entire length of the colony, with a breadth of 200 miles. They comprise an area of 13,656 square miles. It is highly probable that rich and extensive gold fields will be discovered for many years to come. There are immense tracts in the interior which have not yet been prospected. In many miles of country the rocks that belong to a golden area yet remain in their original condition, and will so remain till some fortunate adventurer stumbles by accident on a tangible encouragement.

All the great gold-fields of the west are within two days' journey of the capital, and there is not any mining settlement which may not be easily reached. The gold mining centres present the appearance of orderly and thriving townships, with schools, churches, journals, shops, and places of amusement. The authority to dig or mine for gold is given to all who apply for it. It costs only 10s. a year, and entitles its possessor to take up ground upon any gold-field to the extent of 60 feet by 60 feet to 114 feet by 114 feet, according to the class of mining pursued upon the particular field. If a man wants to open a quartz mine he can take up 50 feet along the line of reef, with a breadth of 100 yards on each side. His miner's right also entitles him to occupy half-an-acre of land for his
welling, and to an electoral vote. A man may
ce up as many claims as he likes if he will only
k them. Sluicing claims extend to 10 acres.
mines that have been since worth two or
undred thousand pounds, were taken up a

few years ago by one or two poor men in virtue of their miners' rights.

Since 1870 the export of gold has been as follows:—

1870	£1,585,736
1871	2,074,937
1872	2,110,299
1873	2,590,145
1874	1,874,837

Coal.

The Coal measures of New South Wales extend from the 29th to the 35th parallel of south latitude. Sydney is the centre of a coal basin, the coal having been traced about a hundred miles to the north to the south and to the west. The areas seamed with this valuable mineral are so vast that two lines of railway pass over them at distances of 100 miles from the metropolis, while the Great Northern runs through coal fields over its entire length. The quality is of the best, and admirably adapted for steamers. The squadrons of the British Navy stationed in the Pacific are all supplied with coal from the colony. In the markets of India and China it competes with English coal.

The following are the returns of the coal raised:—

	Tons.	Value.
1829	800	£400
1851	67,610	25,546
1861	342,067	218,820
1871	898,784	316,340
1872	1,012,426½	396,198
1873	1,192,862	665,747
1874	1,304,567	790,224

The trade is rapidly increasing. The exports now reach the following widely-distant places:—All the other Australasian Colonies, Fiji, New Caledonia, and Honolulu; California and Valparaiso; Java, Sumatra, and the Moluccas; Manilla, and Singapore; Hongkong, Amoy, and other Chinese ports; Japan and Russian Asia; Calcutta, Bombay, and the Mauritius. More than a thousand vessels are annually engaged in this traffic.

Copper, Tin, &c.

Copper is found in many parts. In 1874 there were thirteen copper mines, but few of them have been systematically worked. Some of the native ores are extremely rich, and furnish a large percentage of pure metal.

Tin was first made known in 1852 by the Rev. W. B. Clarke, but not commercially worked till 1870. The quality is of the very best, and takes rank beside Straits tin in the English market. The average cost of raising a ton of tin ore is about £24, the selling price of which in Sydney is from seven to nine pounds below the London price.

Other Minerals.—The Colony is rich in depo- its of brown cannel oil coals and oil shales. They xist in many places at wide areas apart. Iron ores are widely disseminated. The principal beds are atite. In several places there are coal, limestone, on in immediate proximity. At Mittagong in the south, and Wallerawang in the west, pig iron has been produced. There are silver and lead deposits near Yass, and near Scone on the Hunter. There are also deposits of silver ore at Bergalia near Moruya. Cinnabar is found in the Mudgee district, and antimony ores have been worked in the Clarence and other districts. Diamonds, opals, rubies, and other gems have been found in various parts. The number of diamonds found in New South Wales up to the end of 1872 was estimated at between 5,000 and 6,000, the largest having been one of 5¾ carats, and the smallest one-tenth of a grain.

Industries and Manufactures.

The progress of New South Wales in industries and manufactures is very marked. The latest and most approved labour-saving appliances and steam-driven tools have been introduced, and the manufacturers here are able to compete with those of Europe in the supply of many local requirements.

The rivers and coasts of the colony teem with a plentiful supply of *fish*. Mort's freezing process has been introduced lately with great success. Fish preserved by this process are transported by railway to inland cities and towns. The bays and estuaries along the coast furnish natural oyster-beds many miles in length, and nowhere in the world is this delicacy so plentiful and cheap. The *whale-fisheries* are also deserving of notice. In 1841 the export of oil amounted in value to £224,000. But of late this industry has been much neglected, and in 1874 there were only two ships employed, and the value of the produce was only £2,897.

Wine-making is a settled industry. The wines of the Albury district, in the south, are known in all the neighbouring colonies as well as London. The produce of the Hunter River districts has won medals at the Great International Exhibitions of London and Paris. The production in 1863 was 114,888 gallons, in 1872 it was 413,321 gallons of wine and 1,766 gallons of brandy, and in 1874 it was 684,258 gallons of wine and 859 gallons of brandy. The consumption of local wines is increasing every year in Australia. Numerous breweries established here turn out beer of excellent quality. There were 31 breweries in 1874.

Tobacco of local manufacture is finding its way into favour. Large quantities of Virginian leaf are imported for manufacture. One of the largest manufacturers of tobacco in the world, from Virginia in the United States, has fitted up extensive premises in Sydney. The quantity manufactured in 1874 was 14,980 cwt.

The *preserved meats* of New South Wales have acquired a reputation in the markets of the world. Salted and preserved meats to the value of £107,335 were exported in 1874. The manufacture of jams and confectionery, aerated waters, &c., give employment to numerous hands.

The manufacture and working up of *leather* employs nearly 7,000 hands. In 1874 the value of hides and leather exported amounted to £192,688. Sydney carried off prizes and medals for manufactures in leather at the Melbourne Intercolonial Exhibition in 1875.

With wool in abundance, the manufacture of *cloths, tweeds, blankets,* &c., is being rapidly and profitably developed. In 1874 the production was 458,880 yards of cloth and tweeds. One manufacturer alone at present turns out 3,000 yards of cloth per week. The making up of shirts and sewn-clothes gives employment to numbers.

Illuminating and lubricating oils are manufactured from kerosene shale. *Soap* is largely made, and the weight manufactured in 1874 was 82,270 cwt. In the same year *tallow* was exported to the value of £99,649; and tallow *candles* were manufactured to the weight of 11,724 cwt.

Metals, Earths, &c.

In iron the manufactures of New South Wales promise to attain to large dimensions. The iron foundries and engineering establishments here have produced iron steamships, dredges, lighthouses, locomotives, bridges, cylindrical piers, and agricultural implements. Every description of the heaviest kinds of rough work, as well as the finest kinds of work required for engines, is turned out. There are also several galvanized iron factories.

For reducing copper and tin ores there are numerous smelting works. The poorer copper ores from neighbouring Colonies are sent to be smelted in New South Wales. The Hunter River Company's Copper Smelting Works at Waratah had twenty-one furnaces in 1872. More than 30,000 tons of ore were operated on, and the production of pure copper was nearly 2,000 tons. The consumption of coal in the furnaces was about 26,000 tons, and more than 100 men were engaged at the works. The increased production of tin has necessitated a corresponding increase in smelting works.

The manufacture of bricks, encaustic tiles, drain-pipes, and other descriptions of pottery is carried on by the aid of steam-driven machinery. There is constant building work going on in the numerous cities and towns which are springing up in all parts of the country. The capital especially has of late years entered on a course of architectural improvement which is converting rows of stores and shops into streets of palaces. Marble, granite, freestone, and limestone are to be found in abundance in the Colony; and work in earth and stone furnishes employment to many thousands of masons and other labourers.

Ship-building, Docks, &c.

There is a Government Dock at Cockatoo Island, in which H.M.S. "Galatea," of 26 guns and 3,227 tons, was docked. Mort's Dock is also capable of accommodating the largest class of mail steamers that come to the port. The Australian Steam Navigation Company has a slip capable of taking up a vessel of fifteen hundred tons, and there are also smaller private slips and floating docks.

There are numerous varieties of valuable timber in New South Wales, useful for every description of ship and house building and furniture. There is even an export in cut and sawn timber of considerable value. The export in 1874 was valued at £54,131. A license to cut timber is to be had for 20s.; for cedar alone the charge being £3. Shipbuilding is carried on in many places along the coast, and South Sea Island cruisers for the Imperial Government have been constructed here, and met with approval. There are numerous joineries for the supply of woodwork of houses and furniture. All the cabs, carriages, carts, drays, omnibuses, and other vehicles required, are made in the colony, and the proof of the skill of the workmen in this department of industry may be seen in the equipages which daily run along the thoroughfares of the capital.

Conclusion.

Those desirous of further information are referred to the pamphlet published by Mr. Charles Robinson, entitled "New South Wales, the Oldest and Richest of the Australian Colonies," or to the larger work, "The Industrial Progress of New South Wales," published under the auspices of the Exhibition Commissioners of 1870, and also to the work published by the Government entitled "Mines and Mineral Statistics of New South Wales." Enough, however, has been said above to show that New South Wales is a territory of vast and only very partially developed resources, and that it offers every attraction alike to the capitalist, to the man of ingenuity, and to the industrious workman.

APPENDIX.

WAGES.

Carpenters	8/ to 10/	per diem of 8 hours
Smiths	10/ to 12/	" "
Wheelwrights	8/ to 10/	" "
Bricklayers	10/ to 11/	" "
Masons	10/ to 12/	" "

Lodging and Board for working men, 15/ per week.

	Per annum with board and lodging. £ £
Farm Laborers	30 to 40
Shepherds	30 to 35
Females :—	
Cooks (plain)	30 to 40
Housemaids	26 to 30
Laundresses	30 to 40
Nursemaids	20 to 26
General House Servants	26 to 30
Farm House Servants	26
Dairywomen	

PROVISIONS.—1874.

Wheat, per bushel ...	5/6	to 6/6
Bread, per lb. ...	/1½	to /2
Flour, „ ...	/1¼	to /1½
Rice, „ ...	/2¾	to /3
Tea, „ ...	1/2	to 2/6
Sugar, „ ...	/3½	to /4½
Coffee, „ ...	1/4	
Meat, fresh, per lb....	/3½	
„ salt, „ ...	/3½	to /4½
Butter, fresh, „ ...	1/7	
„ salt, „ ...	1/4	
Cheese, English, per lb.	1/6	to 1/8
„ Colonial, „	/6	
Potatoes, per cwt. ...	4/	to 5/6
Wine, Colonial, per gal.	3/6	to 5/6
Beer, „ „	2/	
Candles, per lb. ...	/4½	
Kerosene Oil, ger gal.	2/6	
Tobacco	3/	to 3/7

CLOTHING.

Moleskin Jackets, each	8/	to 12/
„ Coats, „	12/	to 20/
Waistcoats, „	3/	to 5/
Moleskin Trousers, „	4/6	to 9/
Colored Shirts, „	1/6	to 4/6
Strong Boots, per pair	5/9	to 6/
Socks, „	/10	
Handkerchiefs ...	/4½	to /8
Straw Hats	2/6	to 3/6
Print Dresses	7/6	to 12/6
Flannel Petticoats ...	3/6	to 8/
Calico „ ...	4/	to 8/
Flannel, per yard ...	2/	
Calico, „ ...	/8	to 9/
Blankets, per pair ...	12/6	to 20/
Sheeting, Calico ...	1/6	to 2/6

Sydney: Thomas Richards, Government Printer.—1876.

5

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etc.

SINCE the publication in 1891 of the second edition of the "Catalogue of Oil Paintings, Water-Colour Drawings, and Portraits in the National Gallery," the two Galleries then in course of erection have been completed. These two Galleries, the old Picture Gallery, and the room formerly known as the Grosvenor Gallery, have been named respectively the La Trobe, the Stawell, the McArthur, and the Buvelot Galleries, in honour of Charles Joseph La Trobe, Sir William Foster Stawell, David Charteris McArthur, and Louis Buvelot—four colonists the memory of whom, in the opinion of the Trustees, deserves to be perpetuated in this way.

With the exception of the Sculpture located in the Rotunda and the Cast Galleries, the National collection is now exhibited in these four Galleries and the Vestibule leading to them, while the whole collection (with a few unimportant exceptions), wherever located, is now for the first time included in one catalogue.

This is the first Illustrated Catalogue of the National Gallery published, and it will, it is believed, be the means of making the art treasures of the colony more attractive and more widely known.

Descriptive and explanatory notes, as well as short notices of the artists, have in many instances been given. Where there are several works by the same artist, the biographical notice appears in nearly all cases under the work first mentioned in the Catalogue.

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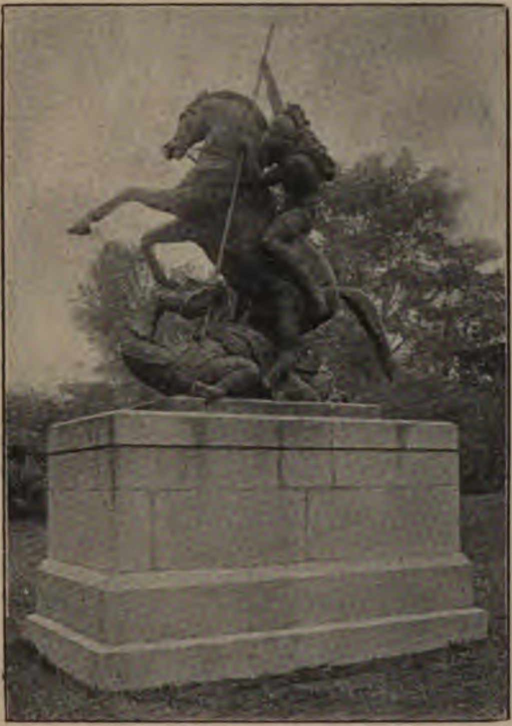
ABBREVIATIONS USED.

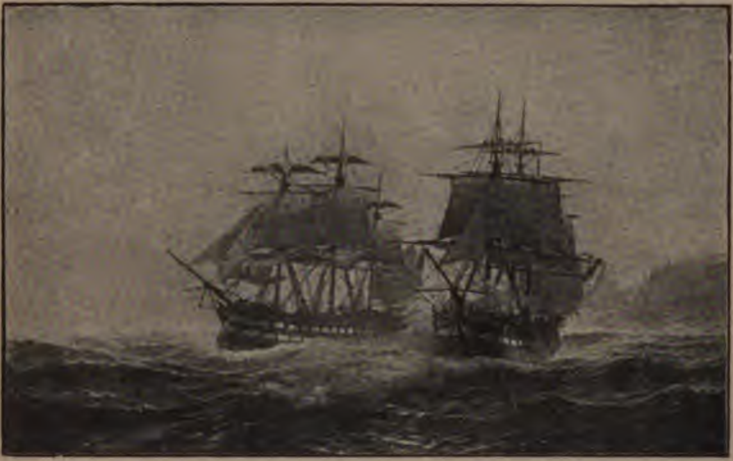
R.A.	Member of the Royal Academy.
A.R.A.	Associate of the Royal Academy.
R.W.S.	Member of the Royal Society of Painters in Water-Colours.
A.R.W.S.	Associate of the Royal Society of Painters in Water-Colours.
R.I.	Member of the Royal Institute of Painters in Water-Colours.
R.S.A.	Member of the Royal Scottish Academy.
A.R.S.A.	Associate of the Royal Scottish Academy.
R.P.E.	Member of the Royal Society of Painter-Etchers.



ST. GEORGE AND THE DRAGON.
By Sir J. E. Boehm, R.A.
On the North Lawn in front of the Public Library.

I.—THE LATROBE GALLERY.

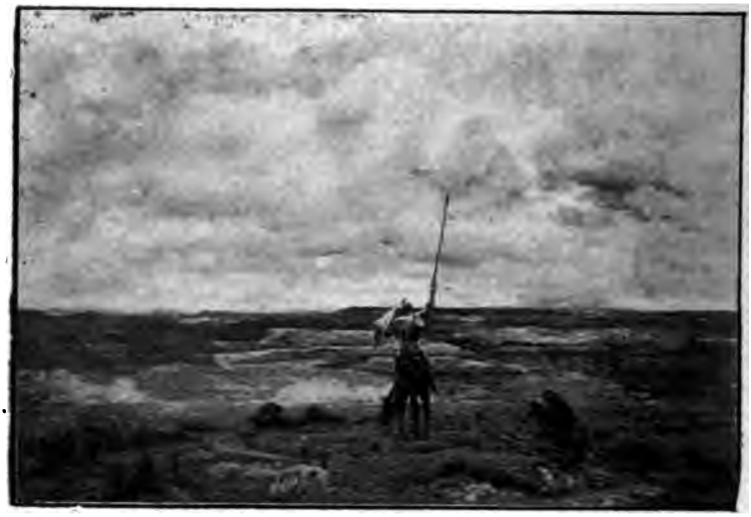
OIL PAINTINGS.



1 Fight between the Ship of the Line "Jupiter" and the French Frigate "Preneuse," in the neighbourhood of Madagascar, 11th October, 1799. By T. Bennetter.

"The Doggerbank—Fog Lifting," by the same artist, is in the National Gallery, Sydney.

Purchased in 1884. Canvas, 54 in. x 86 in.

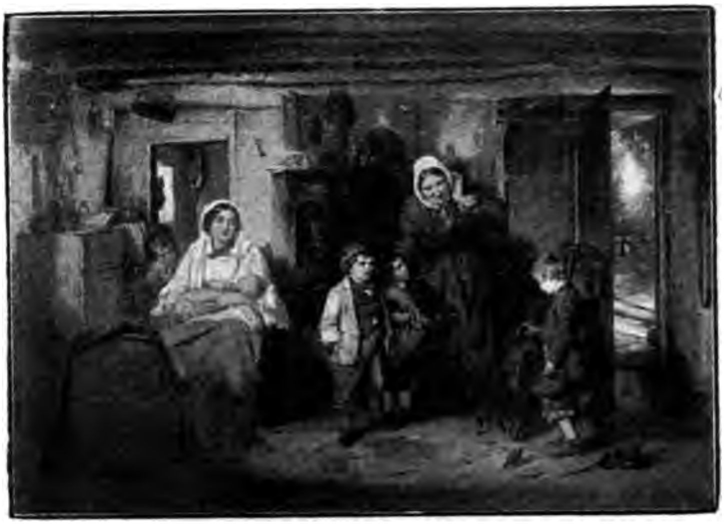


2 Don Quixote. By Adrien Louis Demont.

The Knight, seeing clouds of dust raised by two flocks of sheep travelling along the road, concludes that two armies are coming to engage in battle. Raising his shield and waving his lance, he challenges the imaginary enemy, while his steed crops the scanty herbage of the plain.

M. Demont was born at Douai, France. He devotes himself to landscape, and has been a regular exhibitor at the Salon since 1878. His status as a French artist is sufficiently indicated by the fact that he was one of the painters nominated by the commission for the decoration of the panels of the *Hôtel de Ville* in 1887. The Luxembourg possesses several of his pictures.

Purchased in 1893. Canvas, 61 in. x 44 in.



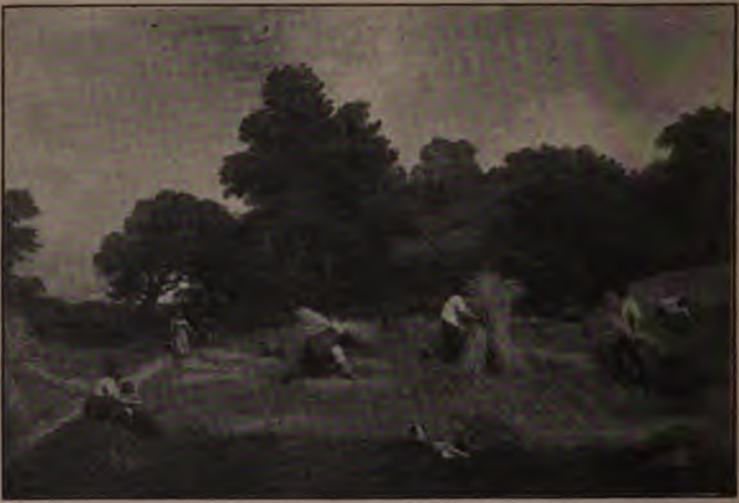
3 The Mitherless Bairn. By Thomas Faed, R.A.

> " Her spirit, that passed in yon hour of his birth,
> Still watches his lone, lorn wand'rings on earth,
> Recording in heaven the blessings they earn,
> Wha couthilie' deal wi' the mitherless bairn.
> Oh ! speak him na harshly—he trembles the while—
> He bends to your bidding and blesses your smile :
> In their dark hour o' anguish the heartless shall learn
> That God deals the blow for the mitherless bairn."
>
> —WILLIAM THOM.

Mr. Thomas Faed was born at Burley Mill in 1826. He studied in the Edinburgh School of Design under Sir William Allen, and was also a pupil of his brother, John Faed. In 1855 the " Mitherless Bairn " was regarded as the picture of the season at the Royal Academy. Mr. Faed was made an A.R.A. in 1859, and an R.A. in 1864. He is also an honorary member of the Vienna Royal Academy.

" By such pictures as the ' Mitherless Bairn ' Mr. Faed has made a profound impression."—Benjamin's *Contemporary Art in Europe.*

Purchased in 1886. Panel, 24 in. x 35 in.



4 Wheat. By John Linnell.

John Linnell was born at London in 1792, and died in 1882. He studied under Benjamin West, John Varley, and at the Royal Academy, where he first exhibited in 1807. For seventy years he was a contributor to the Royal Academy Exhibitions. Beginning as a miniature and portrait painter, in later years he turned his attention to landscapes, in which department he painted many hundreds of pictures which are to be found in public and private collections in England. Two works by him—"The Woodcutter" and "The Windmill"—are in the National Gallery, London.

Purchased in 1888. Canvas, 37 in. x 55 in.

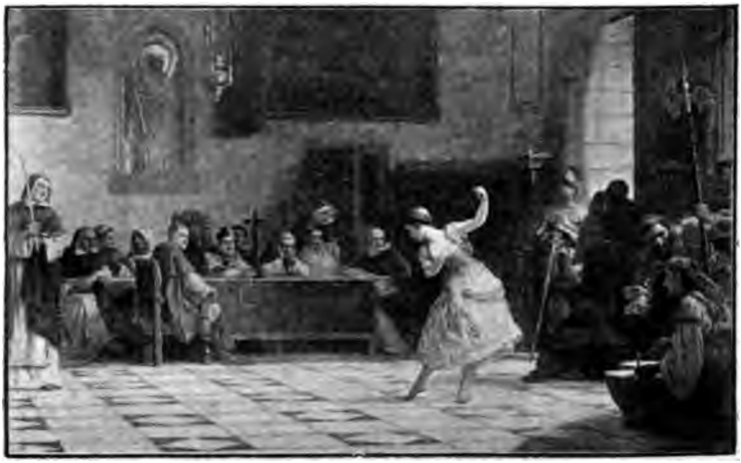
5 The First Snow on the Tyrolean Alps. By Otto Weber.

The summer pasture lands of the Alps are only available during a short period of the year. During the long winter the cattle brought down into the valleys are stalled in warm stables, and fed with hay. At the dawn of summer, however, the "Alp Pasture" is open, and the herdsmen take their stock to the mountains. "The First Snow" represents the end of this summer life. The snow has begun to fall. Winter approaches; and packing his furniture upon his back, the mountaineer descends into the valley.

Otto Weber, who was born in Berlin, was killed in the Franco-German War of 1870. He was a pupil of Steffeck and Couture. He obtained medals at Paris in 1864 and 1869.

"The first picture by Otto Weber that proved his claim to high position was exhibited in the Salon of 1866, and afterwards in Mr. Wallis' Exhibition, in the Suffolk Street Gallery. It was entitled 'La Première Neige sur l'Alm (Bavière),' and represented Bavarian peasants bringing their cattle down from the mountains. The cattle and figures were admirable for perfect freedom of movement and truth of design."—Hamerton's *Painting in France.*

Purchased in 1868. Canvas, 46 in. x 88 in.



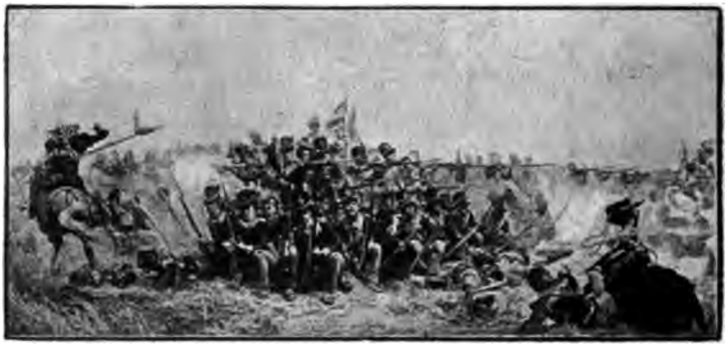
6 A Question of Propriety. By Edwin Long, R.A.

The subject of this picture is a sitting of the celebrated Board known as the "Censores y Veadores," which, in the seventeenth century, was attached to the Holy Office.

The Censores y Veadores—literally the "Censurers and the See-ers"—travelled the country in the interests of morality. The good fathers who composed this critical court not only took to task the painters of sacred subjects, and made their comments upon the "impropriety of exhibiting angels without wings and saints without clothes," but pushed their researches into all matters of public amusement or instruction. They reviewed the gipsy dancers, and inspected, with not unkindly severity, the musical farces which set a-gaping the honest wine-sellers of Andalusia. Any sentiment which smacked of heresy was excised; any attitude which prompted to aught but respectability of manners was forbidden; in a word, they performed for the artists, dancers, and dramatists of Toledo and Seville those offices which are performed nowadays by the Censor of the Press for the Parisian, and by the Lord Chamberlain for the English playwright.

Mr. Edwin Long, who was born at Bath in 1829, died in May 1891. He had been for many years a regular exhibitor, at the Royal Academy, of Spanish and Eastern subjects. He was elected an R.A. in 1881. His "Dorcas Meeting in the Sixth Century" is in the Sydney Gallery.

Purchased in 1871. Canvas, 68 in. x 114 in.



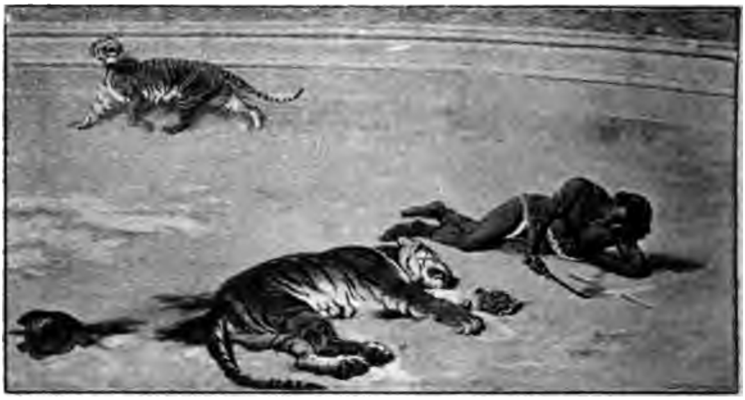
7 Quatre Bras, 1815. By Elizabeth Thompson (Lady Butler).

The Battle of Quatre Bras took place on the 16th of June, 1815—two days before the Battle of Waterloo—between the left of the French army under Marshal Ney and the English advanced guards under the Duke of Wellington. The Duke of Wellington having carried every position won by the French, retreated next morning to the field of Waterloo. Quatre Bras itself is merely a mass of farmhouses situated at the point where the four roads to Brussels, Nivelles, Charleroi, and Namur intersect.

"I never approached a picture with more iniquitous prejudice against it than I did Miss Thompson's 'Quatre Bras,' partly because I have always said that no woman could paint, and secondly because I thought what the public made such a fuss about *must* be good for nothing. But it is Amazon's work this, no doubt of it, and the first fine pre-Raphaelite picture of battle we have had; profoundly interesting, and showing all manner of illustrative and realistic faculty. But actually here—what, I suppose, few people would think of looking at—the sky is most tenderly painted, and with the truest outline of cloud of all in the exhibition; and the terrific piece of gallant wrath and ruin on the extreme left, when the cuirassier is catching round the neck of his horse as he falls, and the convulsed fallen horse, seen through the smoke below, is wrought through all the truth of its frantic passion, with gradations of colour and shade which I have not seen the like of since Turner's death."—*Ruskin's Notes of the Academy, 1875.*

Elizabeth Thompson (Lady Butler) was born at Lausanne, in Switzerland. She attended the South Kensington schools. In 1873 she sent "Missing" to the Royal Academy, a picture which attracted much attention. In the following year the "Roll Call," which was purchased by the Queen, at once made her reputation. Her picture, "Quatre Bras," was at the Academy in 1875.

Purchased in 1884. Canvas, 38 in. x 84 in.

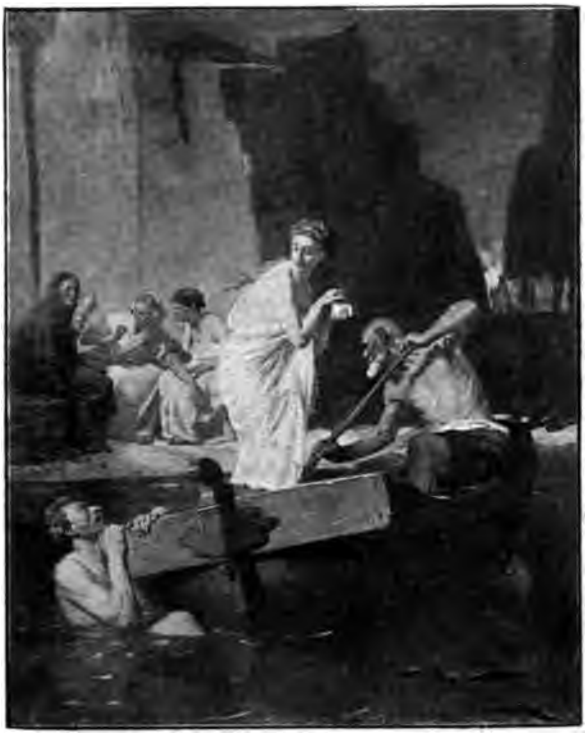


8 A Roman Holiday. By Briton Rivière, R.A.

The title of this picture has been suggested by the well-known passage in Byron's *Childe Harold*, iv. 140.

Mr. Briton Rivière, a distinguished animal painter, was born in London in 1840. He studied art under his father who was head of the drawing school at Cheltenham College, and afterwards a teacher of drawing at Oxford. He graduated at Oxford in 1867, and took his M.A. in 1873. The first pictures exhibited by him were home rural scenes, such as "Rest from Labour" and "Sheep on the Cotswolds," which were shown in the Academy in 1858. He was elected an R.A. in 1881. His picture, "Deer Stealers pursued by Sleuth Hounds," is also in the National Gallery.

Purchased at the Centennial International Exhibition, 1888. Canvas, 38 in. x 69 in.

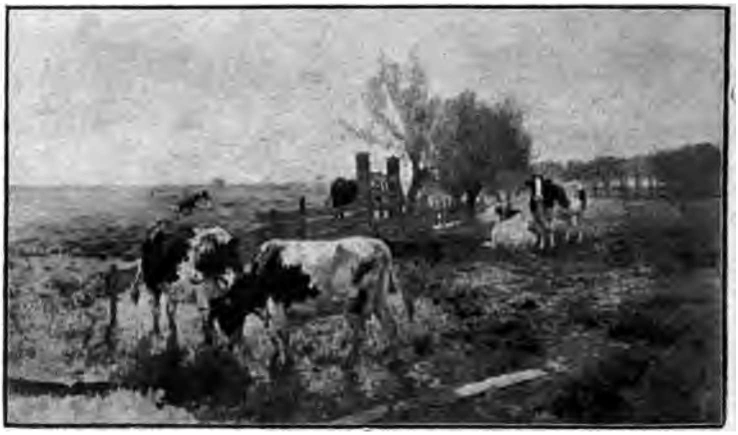


9 Psyché aux Enfers. By Eugène Ernest Hillemacher.

The subject of the painting is that of the final trial of Psyché—her descent into Hades to fetch some of the beauty of Proserpine for Venus. She has arrived at the banks of the Styx.

Eugène Ernest Hillemacher was born at Paris in 1820. He was a pupil of Léon Cogniet. In 1865, the year in which this picture was painted, he was decorated with the Legion of Honour, and obtained several medals at Paris. His "Confessional in St. Peter's at Rome" is in the Luxembourg.

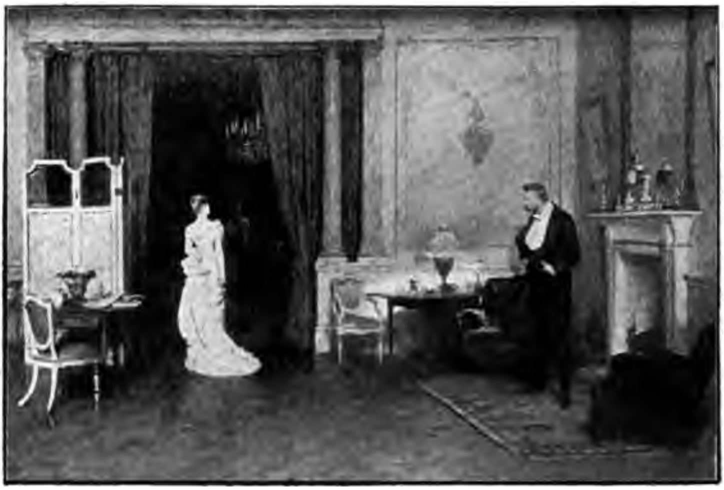
Presented by Gustave Curcier, Esq., in 1872. Canvas, 46 in. x 36 in.



10 Dutch Pastures (Morning). By Professor Hermann Baisch.

Professor Baisch, who was born at Dresden in 1846, studied in Stuttgart and Paris, and under Adolf Lier at Munich. He was elected Professor at the Carlsruhe Academy in 1880, and has received several medals at Vienna and Munich.

Purchased in 1888. Canvas, 31 in. x 55 in.



11 The First Cloud. By W. Q. Orchardson, R.A.

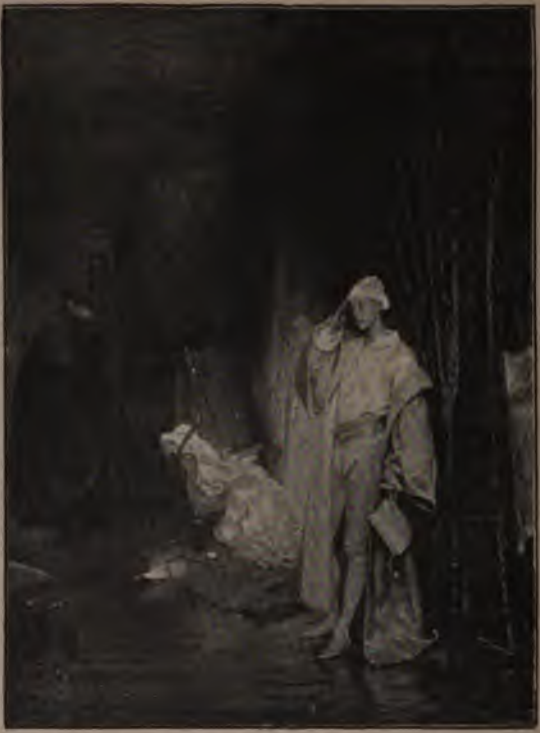
Mr. Orchardson was born at Edinburgh in 1835, and educated at the Trustees' Academy. He removed to London in 1863, where he has since resided, frequently exhibiting at the Royal Academy. At the Paris Universal Exhibition in 1867 Mr. Orchardson's "Challenge" and "Christopher Sly" won for him one of the few medals awarded to English artists. He was elected a Royal Academician in 1877, and his "Napoleon on Board H.M.S. Bellerophon" was purchased for the Chantrey collection in 1880.

Purchased in 1877. Canvas, 52 in. x 76 in.

12 A Flitting Gleam Before the Storm. By K. Heffner.

Two pictures by this artist—"Twilight in Bavaria" and "Desolation"—are in the Sydney Gallery.

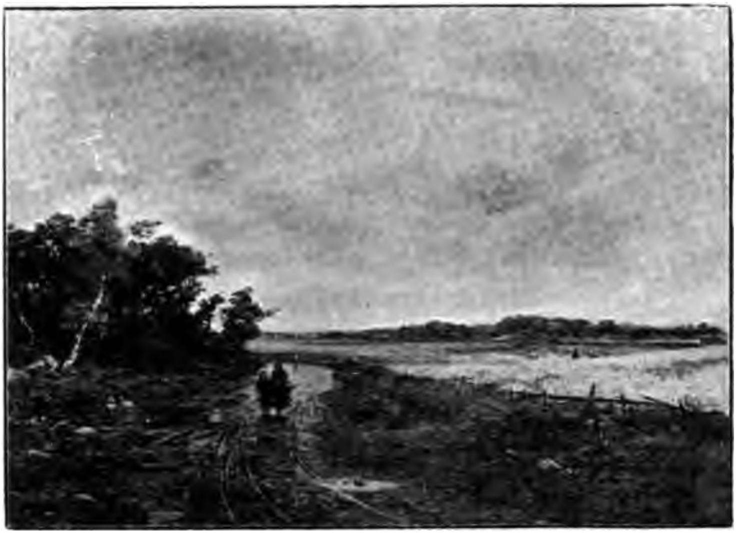
Purchased in 1884. Canvas, 31 in. x 47 in.



13 Challenged. By John Pettie, R.A.

Mr. Pettie was born in Edinburgh in 1830, and died in 1893. Educated in the Trustees' Academy and in the life schools of the Royal Scottish Academy, he exhibited his first picture—"The Prison Pet"—in Edinburgh in 1859. He first exhibited at the Royal Academy in 1860, and "The Drumhead Court Martial" in 1867 led to his election as an Associate of the Academy. In 1874 Mr. Pettie was elected an R.A. His "Arrest for Witchcraft" is also in the Melbourne Gallery. "The Vigil" was purchased for the Chantrey collection.

Presented by J. Paterson, Esq., in 1885. Canvas, 49 in. x 37 in.



14 Autumnal Showers. By Peter Graham, R.A.

Peter Graham was born at Edinburgh in 1836, and studied in the School of Design of that city under R. S. Lauder and John Ballantyne. He was elected an R.A. in 1881. His favourite subjects are Scottish Highland scenes, with cattle or rocky shores in misty weather. His "Rising Mists" is in the Sydney Gallery.

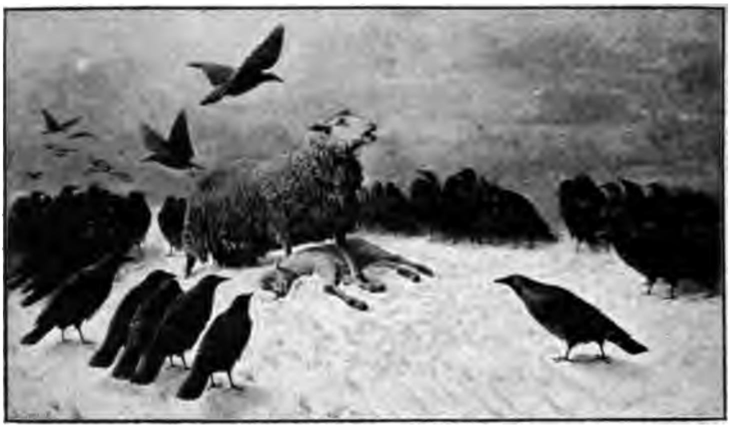
Purchased in 1869. Canvas, 46 in. x 88 in.

15 Love's Pilgrimage. By N. Gysis.

A Greek girl visiting a mountain holy shrine to offer her betrothal trinkets and to pray for her absent lover's return.

Nicholas Gysis, a Greek by birth, studied at Munich, where he has resided since 1874. He has painted several Oriental subjects, and recently some large allegorical figures.

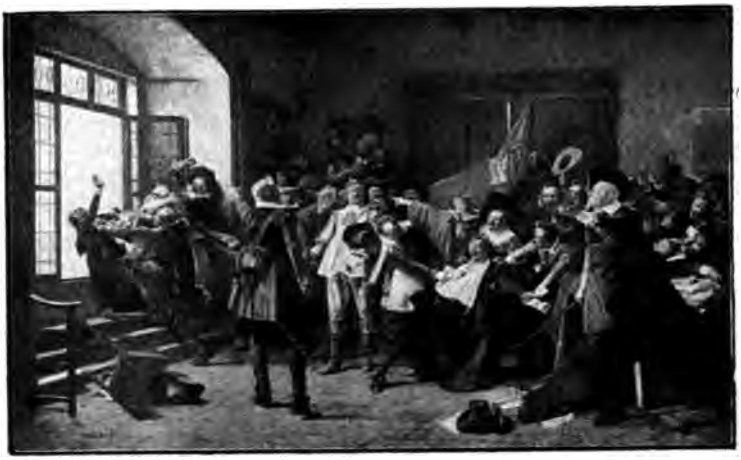
Purchased in 1884. Canvas, 47 in. x 30 in.



16 Anguish. By A. T. A. Schenck.

August Frederic Albrecht Schenck was born at Glückstadt, Holstein, in 1828. He followed business pursuits in England and Portugal before he became a pupil of Cogniet. "Anguish" was exhibited at the Salon of 1878.

Purchased in 1880. Canvas, 59 in. x 98 in.



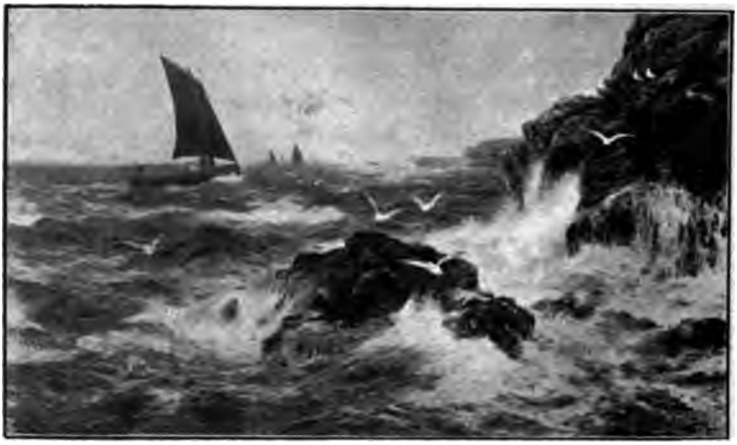
17 La Défenestration, 1618. By V. Brozik.

Vaczlav Brozik was born at Tzemosehna, near Pilsen, Bohemia, in 1852. He was a pupil of the Prague Academy, and studied subsequently under Piloty at Munich, and under Munkacsy in Paris, where he has followed his profession as a painter of historical subjects since 1876. He is the recipient of several gold medals and titular distinctions. "La Défenestration" was exhibited at the Paris Exhibition, 1889. His picture, "Embassy of Ladislaus of Bohemia to Charles VII. of France," is in the National Gallery, Berlin.

This picture represents an event which took place at the Hradschin or Royal Castle on the 23rd of May, 1618. Ferdinand, King of Bohemia, having abolished certain Protestant privileges, the members of the Protestant Diet visited the Royal Castle to explain their grievances to the Regents. They demanded the names of the Imperial advisers who had been the means of causing the curtailment of their privileges—making many charges against two of the Regents, Martinitz and Slawata, who were eventually declared to be enemies of the commonwealth, and, along with Fabricius, the Secretary, thrown through the windows a distance of eighty feet into the castle moat. This violence produced great excitement throughout the country, and was the beginning of what is known as the Thirty Years War.

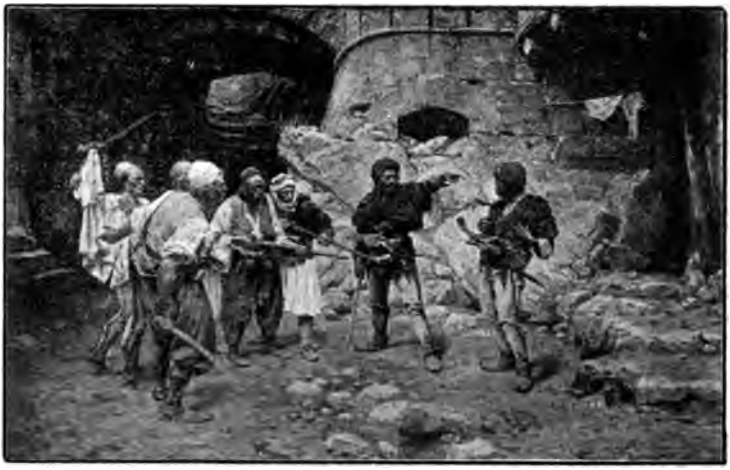
In the centre of the picture stands Count Thurn holding documents in his hands. Opposite him in the foreground is Marshal Colonna von Fels giving orders to throw from the window Slawata, who is resisting the efforts of Johann von Rishan, Lacenbok, Albin Schlick and Berka. To the left Martinitz is falling out of the open window, pushed vehemently by Wenzel Ruppa, Paul Kaplirsh and Willem von Lobkowitz, who is striking Martinitz's hands with his fists. In the right hand foreground Andreas Schlick is entering the room in a great hurry. Behind him is Fabricius, the Secretary, sitting at a table defending himself.

Purchased in 1890. Canvas, 83 in. x 52 in.



18 An Easterly Breeze. By Peter Graham, R.A.

Purchased in 1887. Canvas, 42 in. x 72 in.



19 The Traitor. By P. Joanowitch.

Purchased in 1890. Canvas, 60 in. x 40 in.

20 A Salvation Army Shelter. By E. Borough Johnson.

"Come unto Me, all ye that labour and are heavy laden, and I will give you rest." Mat. ii., 28.

Purchased by Professor Herkomer in 1892. Canvas, 24 in. x 33 in.

21 The Stud Herd. By A. Braith.

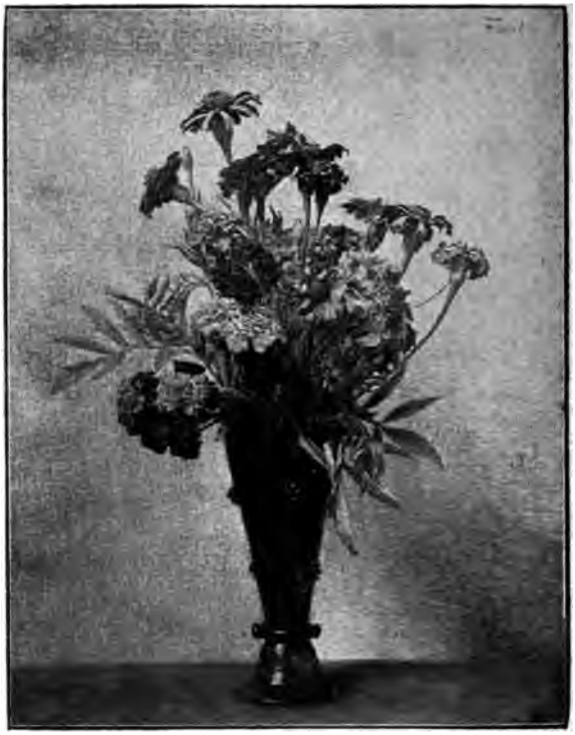
Anton Braith was born at Biberach, Würtemberg, in 1836. He studied at the Art School. Stuttgart, and at the Munich Academy. The Sydney Gallery possesses one of his pictures—"Returning from the Pastures."

Purchased in 1884. Canvas, 20 in. x 37 in.

22 Still Life. By G. Lance.

George Lance, who was born at Little Easton in 1802, died in 1864. He was a successful painter of still life. Three of his pictures are in the National Gallery, London.

Purchased in 1883. Canvas, 18 in. x 14 in.



23 Marigolds. By H. Fantin-Latour.

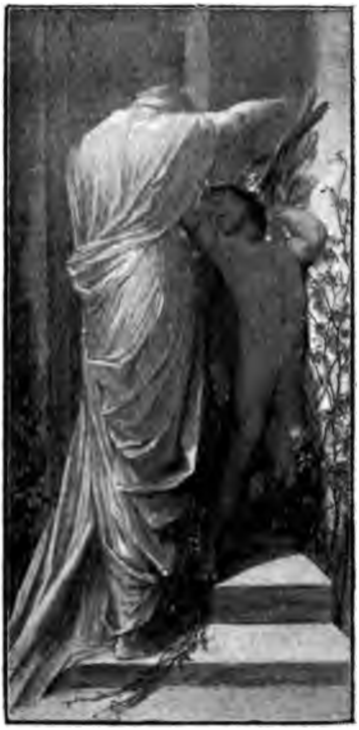
Henri Fantin-Latour was born at Grenoble in 1836. He exhibited at first as a *genre* and portrait painter, but latterly has devoted himself almost entirely to flower painting. He was decorated with the Legion of Honour in 1879.

Purchased in 1892. Canvas, 20 in. x 15 in.

24 Venetian Girl. By Eugène de Blaas.

Eugène de Blaas was born at Albano, near Rome, in 1843. He studied under his father, Karl Blaas, at the Venice Academy, of which he was a member, and also at Vienna, whence he went to Rome and Paris as Austrian Pensionary. Another picture by him, bearing the same name, is also in this Gallery.

Purchased in 1879. Panel, 12 in. x 9 in.

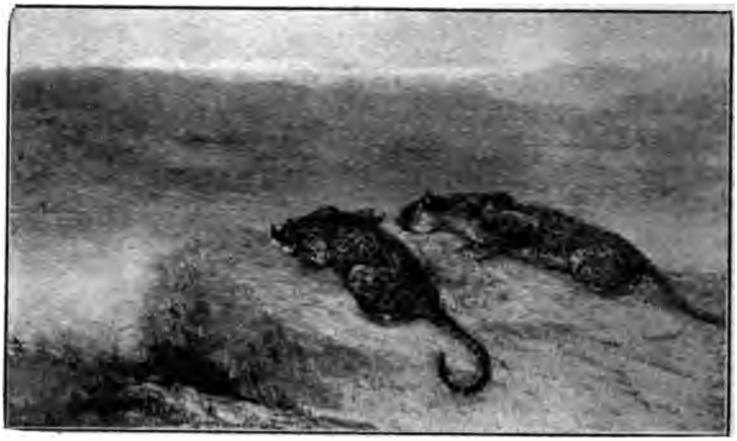


25 Love and Death. By G. F. Watts, R.A.

Love, helpless and agonised, is trying with his frail body to stop the terrible figure of Death, which, resistless and inexorable, has crossed his threshold. The struggle is hopeless, and Love, with broken wings, is pushed aside, while Death enters to rob him of his treasure. This picture is a replica of a large one exhibited at the opening of the Grosvenor Gallery in London in 1877, and since bequeathed by Mr. Watts to the nation.

George Frederick Watts, who was born at London in 1818, studied at the Royal Academy, where he first exhibited in 1837. Mr. Watts has executed one of the frescoes in the Poets' Hall of the New Houses of Parliament, and decorated the west end of the new hall at Lincoln's Inn with a large fresco—"The School of Legislation." He was elected an R.A. in 1868, and his "Psyche" was purchased for the Chantrey collection in 1882. He is also noted as a sculptor.

Purchased in 1888. Canvas, 45 in. x 22 in.



26 African Panthers. By J. M. Swan, A.R.A.

Of this picture Professor Herkomer writes :—"This is a gem of colour and subtle workmanship. This painter thoroughly understands the art of hiding his art; of suggesting the most intricate forms by apparent neglect of outline. The outline is *here*, but by dint of true artistic workmanship the outline is reduced, after having been enforced to a mere suggestion of form, and the importance of this feature in art cannot be over-estimated. The method of workmanship in this is indirect, unlike Mr. Waterhouse, and quite different from Mr. Dicksee's method. Mr. Swan relies more for his effects upon painting *light over dark*. He is a fastidious worker and produces little, but he is one of our strongest artists, and, I would say, our most original animal painter."

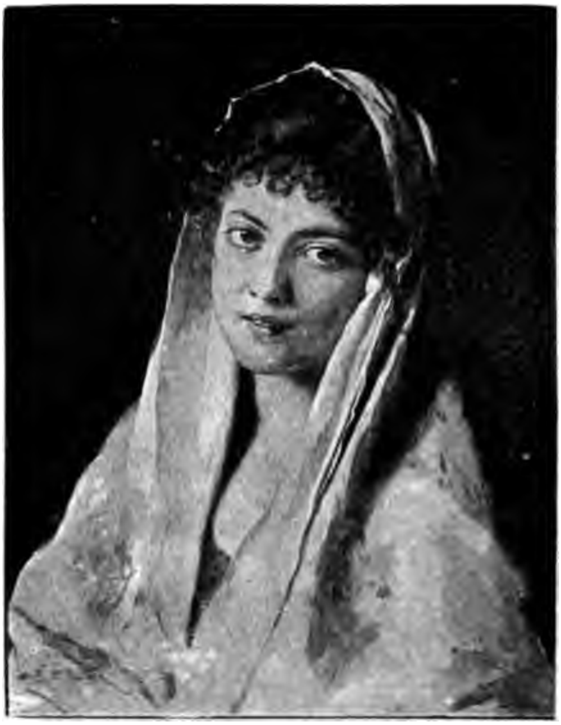
John Macallan Swan, who was born in 1847, studied at Lambeth, the Royal Academy, and at Paris under Frumiet and Barye. His "Prodigal Son" was purchased for the Chantrey collection in 1889. He was elected an A.R.A. in 1894.

Purchased by Professor Herkomer in 1892. Canvas, 14 in. x 25 in.

27 Cottage Interior. By Edouard Frère.

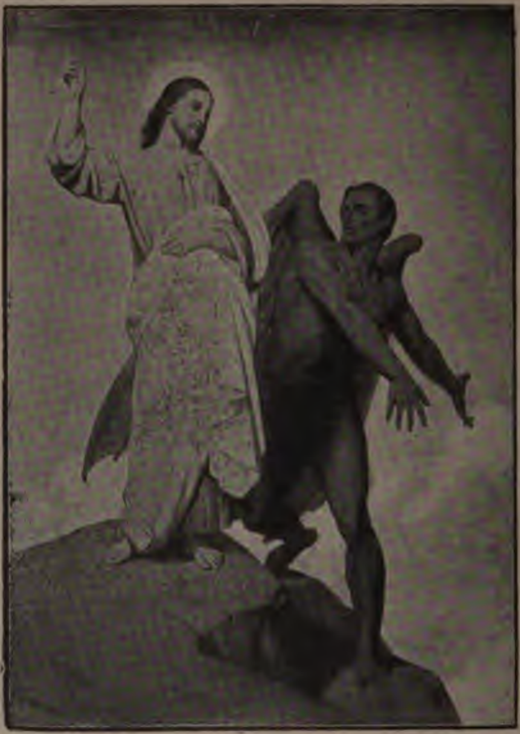
Edouard Frère, born at Paris in 1819, was a pupil of Paul Delaroche. He first exhibited at the Salon of 1843, and was decorated with the Legion of Honour in 1855. This picture was selected by Mr. Ruskin for the National Gallery of Victoria.

Purchased 1872. Canvas, 11 in. x 10 in.



28 Venetian Girl. By Eugène de Blaas.

Purchased in 1879. Panel, 12 in. x 9 in.

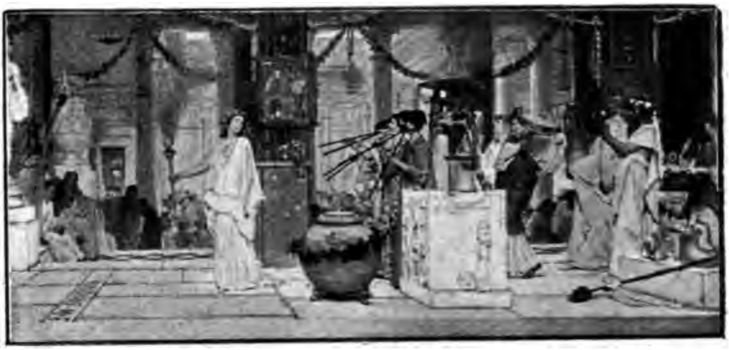


29 Temptation of Christ. By Ary Scheffer.

A small replica of the original in the Louvre.

Ary Scheffer, born at Dordrecht in 1795, died in 1858. He was placed under the instruction of Guérin at Paris. For several years he painted small *genre* subjects, but eventually occupied himself with scenes from the works of the poets—"Beatrice" and "Francesca da Rimini," which appeared at the Salon of 1835, being his crowning efforts in this department. Subsequently he devoted himself to religious subjects, producing, amongst others, "Christ Bearing His Cross," "Temptation of Christ," "Christus Consolator," etc. He received the decoration of the Legion of Honour in 1825.

Purchased in 1886. Canvas, 29 in. x 21 in.

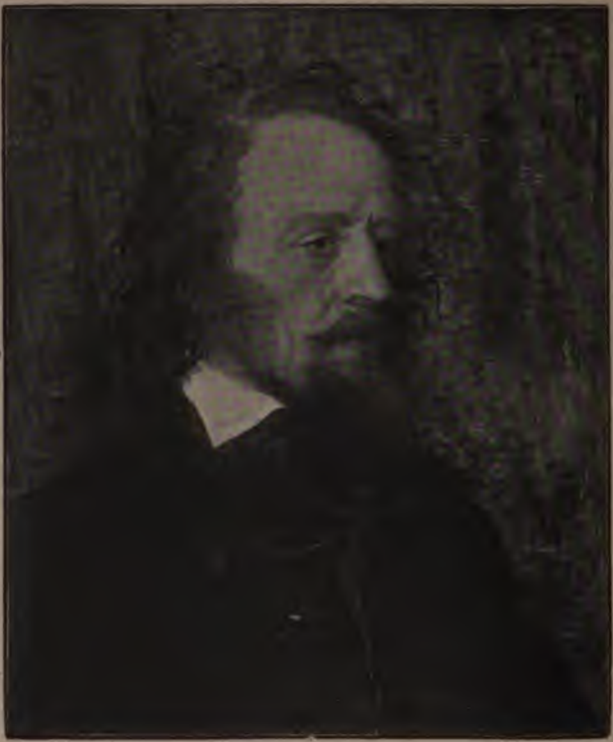


30 The Vintage Festival. By L. Alma-Tadema, R.A., R.W.S.

This picture represents the entry into the Temple of Bacchus of those who came to honour the god for an abundant vintage.

Mr. Alma-Tadema was born at Dronryp, in the Netherlands, in 1836. He entered the Academy at Antwerp in 1852, and afterwards placed himself with the late Baron Henry Leys, whom he assisted in painting several large pictures. He has resided in London for many years. Between 1864 and 1879 he received several medals and other distinctions. Mr. Alma-Tadema was elected a Royal Academician in 1879. He is also an honorary member of the Royal Academies of Madrid, Vienna, Stockholm, and Naples.

Purchased in 1888. Panel, 19 in. x 45 in.



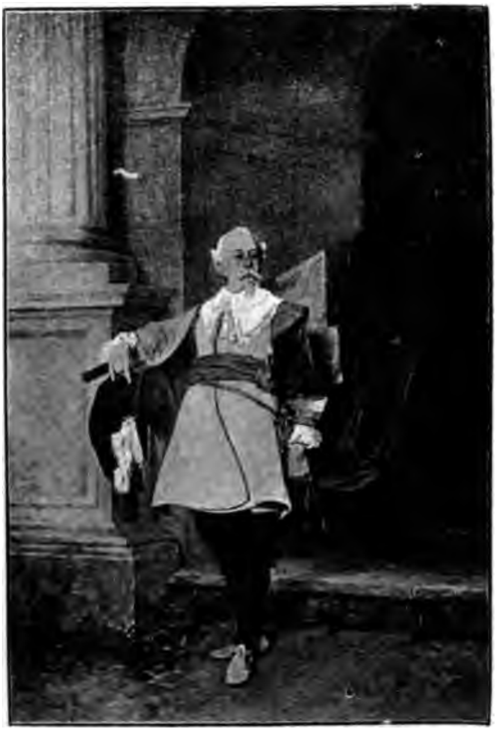
31 Portrait of Lord Tennyson. By G. F. Watts, R.A.

Purchased in 1888. Panel, 24 in. x 20 in.

32 The Poultry Vendor. By Pierre Van Schendel.

Pierre Van Schendel was born at Ter Heyden, North Brabant, in 1806, and died in 1870. He studied in Amsterdam, Rotterdam, and Antwerp, and obtained medals at Paris, Holland, and Brussels. His earlier works included a variety of subjects, but after a time he devoted himself to scenes by lamplight and firelight, which were very popular. At the National Gallery, Berlin, are two of his market scenes—a woman selling fish, and another with vegetables.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 14 in. x 18 in.



33 The Standard Bearer. By C. Seiler.

C. Seiler studied at the Academy at Munich, where he still practises his profession as an artist.

Purchased in 1884. Panel, 15 in. x 10 in.

34 Card Players in a Country Inn. By Hugo Kauffmann.

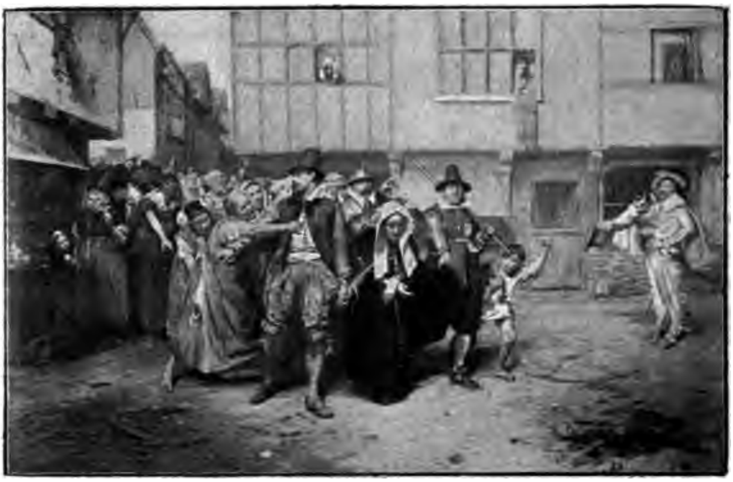
Hugo Kauffmann was born at Hamburg in 1844. He studied at the Städel Institute, Frankfort, and for a short time at Düsseldorf, but eventually settled at Munich.

Purchased in 1879. Panel, 10 in. x 17 in.

35 Départ du Fiancé. By Guillaume Koller.

Guillaume Koller, who was born at Vienna in 1829, died in 1885. He studied at the Academy of Fine Arts in Vienna, and afterwards at Düsseldorf from 1831 to 1855. Koller drew his inspiration from the history and literature of Germany, and spent much time on his works.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 28 in. x 22 in.



36 Arrest for Witchcraft. By John Pettie, R.A.

Purchased in 1876. Canvas, 38 in. x 71 in.

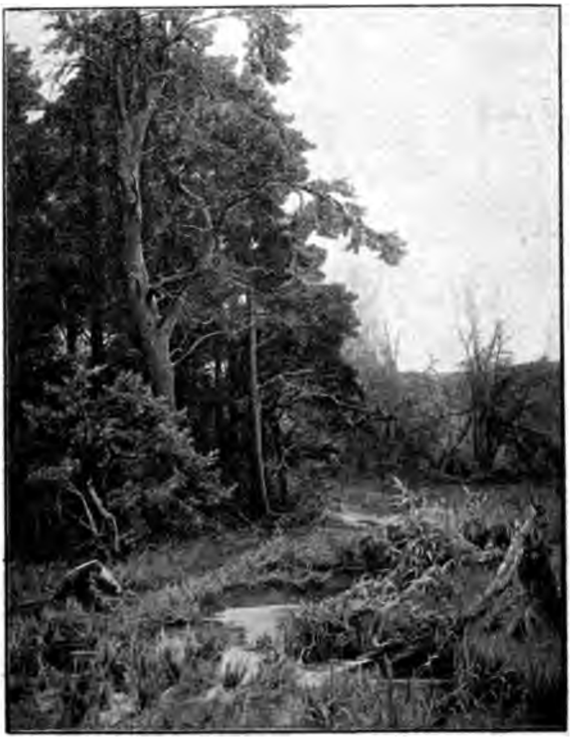
37 Early Morning, Bavaria. By Karl Heffner.

Purchased in 1891. Canvas, 76 in. x 37 in.

38 French Artists in a Spanish Posada. By J. G. Vibert.

Jehan Georges Vibert was born at Paris in 1840, and holds an excellent reputation in his own country. He was a pupil of J. F. Barrias, and gained medals at the Paris Salons of 1864, 1867, and 1868, and at the *Exposition Universelle* of 1878. He lectures on painting at the Ecole des Beaux-Arts.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 29 in. x 39 in.



39 "Summer has gone on Swallows' Wings." By Frank Walton, R.I.

This picture was exhibited at the Royal Academy in 1891.

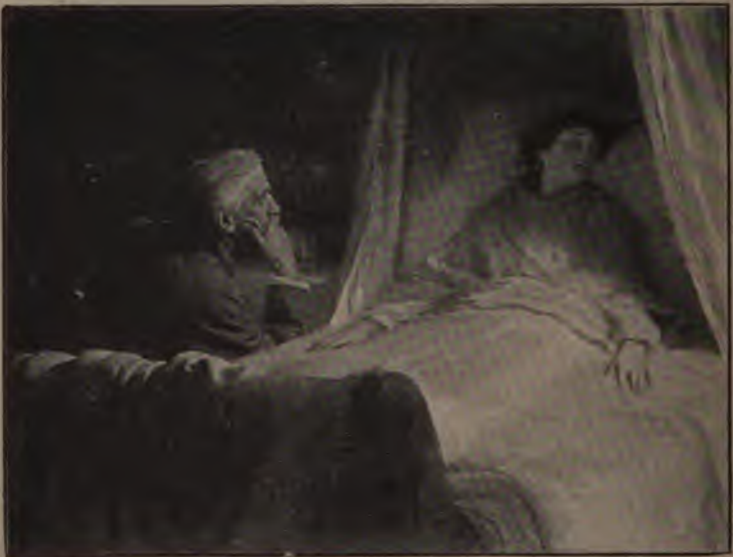
Purchased in 1892. Canvas, 48 in. x 60 in.

40 The Seine at Saint-Pierre, near Louviers. A Morning in October. By A. Nozal.

"One of the best painters of river scenery is M. Nozal. His picture, 'The Seine at Saint-Pierre, near Louviers, on an October Morning,' exhibited in the Salon of 1891, is a remarkably true and beautiful interpretation of a very difficult effect. The white moon is still visible in the grey sky, and the mist is rising between us and a line of poplars and willows on the opposite shore, pale with distance, yet rich in autumnal colouring. The foreground was remarkable for the artist's success in the suggestion of early dew, and even of gossamer, that cannot be painted."—Hamerton's *Present State of the Fine Arts in France.*

M. Nozal, who was born in Paris, studied under Luminais. He has been exhibiting at the Salons since 1882, and has gained several medals.

Purchased in 1891. Canvas, 118 in. x 79 in.

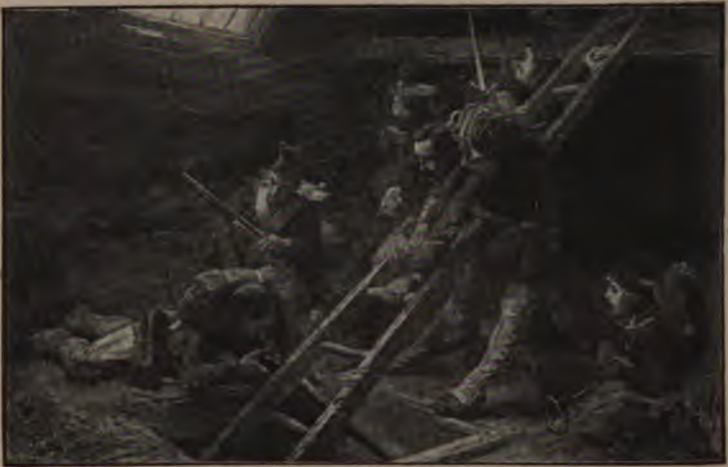


41 The Crisis. By Frank Dicksee, R.A.

Speaking of "The Crisis" Professor Herkomer says:—"This represents strong emotional art, and the subject is treated without theatrical subterfuge. The picture is full of intense feeling for the subject and refinement in the drawing; indeed, it is more valuable as a piece of drawing than as a piece of painting, as the colour is not equal to its powerful drawing and refined sentiment in the treatment of its subject. Mr. Frank Dicksee has clearly had Sir Fred. Leighton as a guide in his style of work, a fact which is more clearly seen in other work where the nude is represented."

Frank Dicksee was born in 1853, and studied under his father, Thos. F. Dicksee, and afterwards at the Royal Academy, where he first exhibited in 1876. In 1877 his picture "Harmony" was purchased for the Chantrey collection, bringing him prominently into notice. He was elected an R.A. in 1891.

Purchased by Professor Herkomer in 1891. Canvas, 48 in. x 61 in.

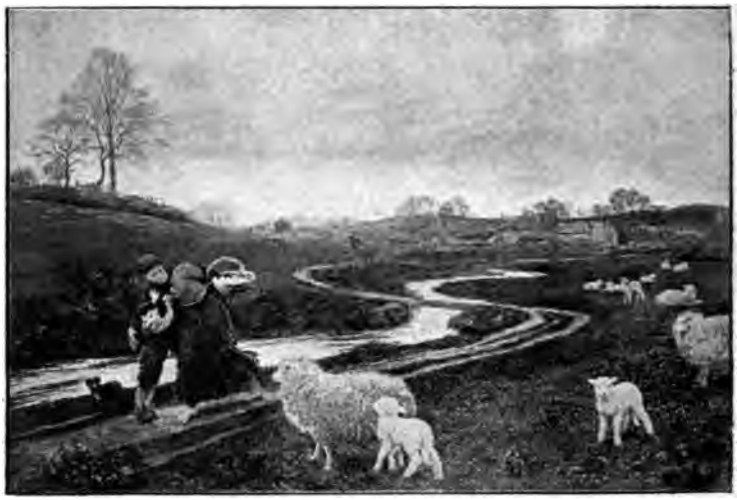


42 No Surrender. By Andrew C. Gow, R.A.

An Episode from the Franco-German War.

Mr. Gow was born in London in 1848, and educated at St. John's School, Warwick, and in London. In 1868 he was elected a member of the Royal Institute, and since 1869 has been a constant exhibitor at the Royal Academy. His "Relief of Leyden" and "Jacobite Proclamation" are in the National Gallery, Sydney. Mr. Gow was elected an Associate of the Royal Academy in 1881, and an R.A. in 1891. He devotes himself chiefly to the portrayal of scenes in soldier life. His "Cromwell at Dunbar" was purchased for the Chantrey collection in 1886.

Presented by Dugald McDougall, Esq., in 1879.
Canvas, 35 in. x 53 in.

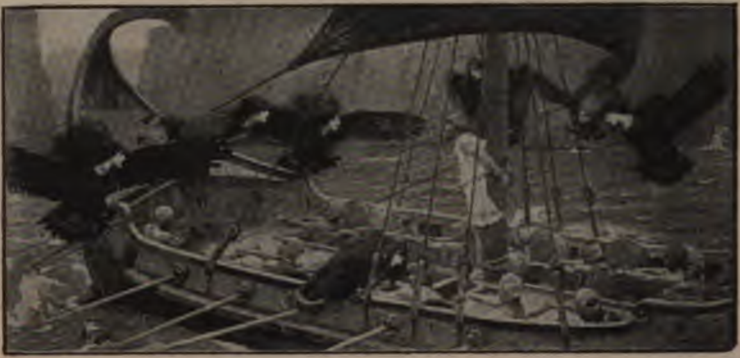


43 The Right of Way. By F. Walker, A.R.A.

Of Walker Professor Herkomer says :—"As a water-colour painter he stands alone, for the consummation of that bewitching material has certainly been reached by this painter. In his 'Marlow Ferry' and 'Fishmonger' the beauty of water-colours has reached its highest. The 'Right of Way' is a beautiful example of his work. He is and must remain the safest guide for the young painters."

Frederick Walker was born at London in 1840, and died in 1875. He studied with Mr. Baker, a London architect, and at the Royal Academy, where he exhibited his first picture in 1863. He was well known as an illustrator. "The Right of Way" was painted in the last year of his life, and is unfinished in parts. His "Vagrants" and "Harbour of Refuge" are in the National Gallery, London.

Purchased by Professor Herkomer in 1891. Canvas, 45 in. x 31 in.



44 Ulysses and the Sirens. By J. W. Waterhouse, A.R.A., R.I.

According to the Homeric legend, when Ulysses, in his wanderings, came near the island where the Sirens dwelt, on the advice of the enchantress Circe he stopped the ears of his companions and caused himself to be tied to the mast of his vessel until the voices of these mythical beings who were supposed to have the power of alluring mariners to destruction by their sweet song, could no longer be heard.

In art the Sirens are usually represented with the bodies of women and the legs of birds, with or without wings, but appear more rarely with only the heads of women.

Prof. Herkomer, speaking of "Ulysses and the Sirens," says:—"Here we have what might be more definitely called imaginative art, *i.e.*, the art of conjuring up the probable appearance of an ancient scene, and the subject is treated with a curious regard for Japanese art, and equally so for the art of the Greek vases. It was from one of the latter that he got the idea of the picture, and this is his authority for making Sirens such as we have always imagined harpies to be represented. The colour, full and rich, is in no way impossible, but is distinctly agreeable. The painting is direct and simple, everything painted more or less at once (just the reverse method to that employed by Dicksee). But this does not mean that he gets what he desires at once; he may paint a part twenty times, but each time it will be complete. This is the French influence upon us."

John William Waterhouse was born of English parents at Rome in 1849. He studied at the Royal Academy, where he first exhibited in 1874. He was elected an A.R.A. in 1885. His picture, "The Magic Circle," was purchased under the terms of the Chantrey Bequest, in 1886. "Diogenes" is in the National Gallery, Sydney.

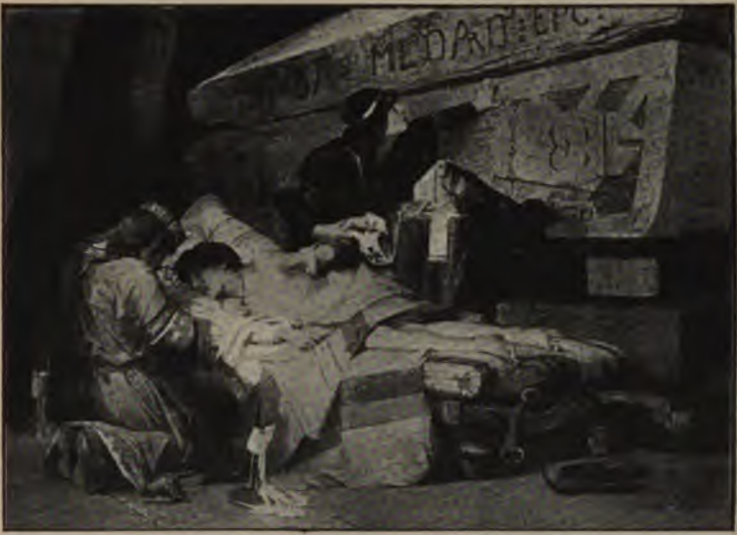
Purchased by Professor Herkomer in 1891. Canvas, 57 in. x 73 in.

45 An English Summer's Day. By J. W. North, A.R.A., R.W.S.

Of this artist Professor Herkomer says:—"J. W. North has steadily gained strength as a painter—poet he always was in his art—and the oil picture I bought for Melbourne shows us a tenderness of colour found in no other landscape painter of the day. He lives away from society, in Somersetshire, and lingers over his work in a way unknown to most of our business-like painters. He is now a man of fifty, and not being a prolific painter, he gives us the very *best* art he can in each work. I can safely say he is the only landscape painter of the day that can be called a colourist. His art is not for the general public; it is for the few."

Mr. North was a friend of and fellow-worker with the late Frederick Walker, and it is claimed that he founded the "Walker" School of Painting. He was elected an A.R.A. in 1893.

Purchased by Professor Herkomer in 1892. Canvas, 36 in. x 42 in.

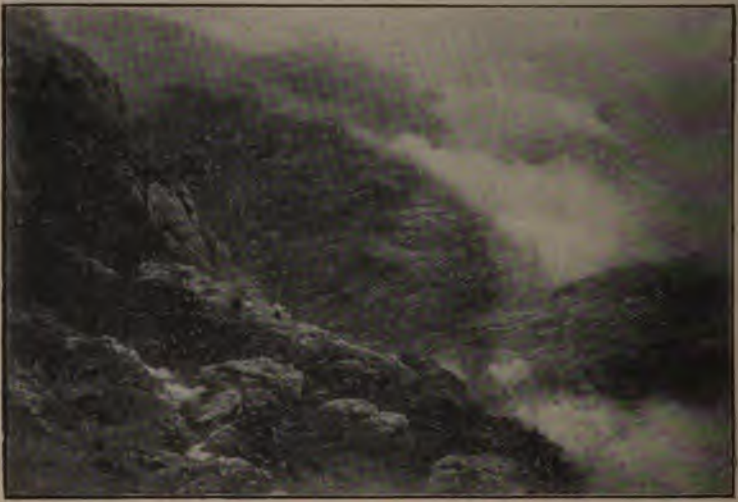


46 The last Moments of Chlodobert. By Albert Maignan.

"Abandoning all idea of human aid for their son, Fredegonda and Chilperic placed him on a stretcher, and, carrying him to St. Medard's tomb, laid him down by the side of it . . . . but the sick man, worn out, succumbed to his illness."

Albert Maignan was born at Beaumont (Sarthe), and studied under Noël and Luminais. He has been awarded several medals at the Paris Salon, and had the decoration of the Legion of Honour conferred on him in 1883. His picture, "Dante meeting the Countess Mathilda," is in the Luxembourg Museum.

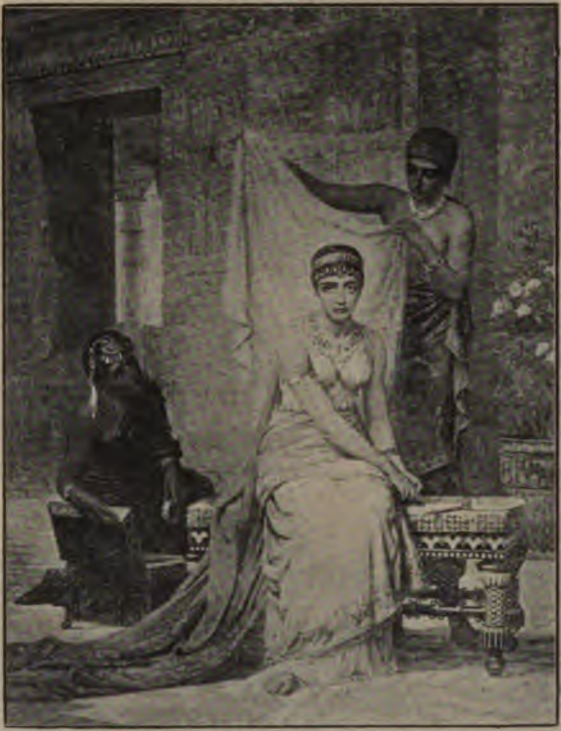
Presented by Messrs. Wallis and Son in 1885.
Canvas, 40 in. x 53 in.



47 After the Massacre of Glencoe. By Peter Graham, R.A.

> "The mist-wreath has the mountain crest,
> The stag his lair, the erne her nest,
> Abode of lone security.
> But those for whom I pour the lay,
> Not wild-wood deep, nor mountain gray,
> Nor this deep dell, that shrouds from day,
> Could screen from treach'rous cruelty."
>
> —Scott's *Massacre of Glencoe.*

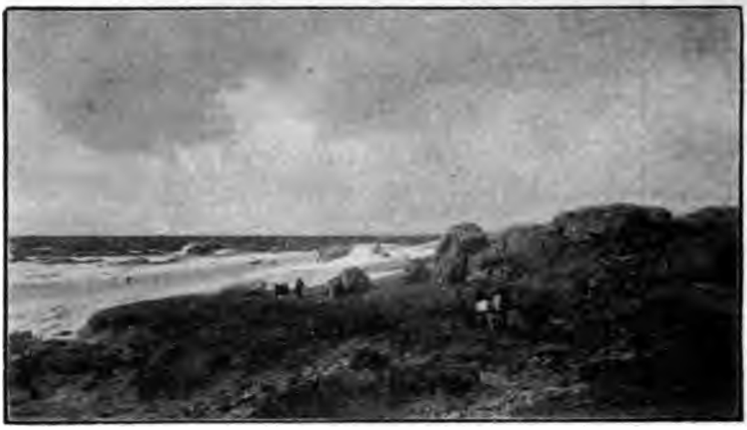
Presented by James Graham, Esq., in 1889. Canvas, 48 in. x 69 in.



48 Queen Esther. By Edwin Long, R.A.

The subject of this picture, which is a replica, is taken from the fourth chapter of the Book of Esther, when Mordecai intimates to his ward that she must go to the King and use her influence to avert from her people their impending fate. She pleads the law which punishes with death anyone who enters the inner court of the palace unbidden; nevertheless, he urges the necessity for her to undertake the duty, despite the risk which attaches to it. She consents, and requests the Jews to fast and to pray for her, adding, "If I perish, I perish!" The scene is laid in one of the courts of "Shusan, the Palace," its elaborate Persian architecture constituting the background of the picture; the Tables of the Law are conspicuous on its walls, perhaps setting forth that particular enactment which Esther was about to contravene at her peril. The details are gathered from various authorities, but principally from Rawlinson's *Ancient Monarchies, Vol. III.* The colours of the hangings and of the pavement are taken from the first chapter of Esther, verse 6.

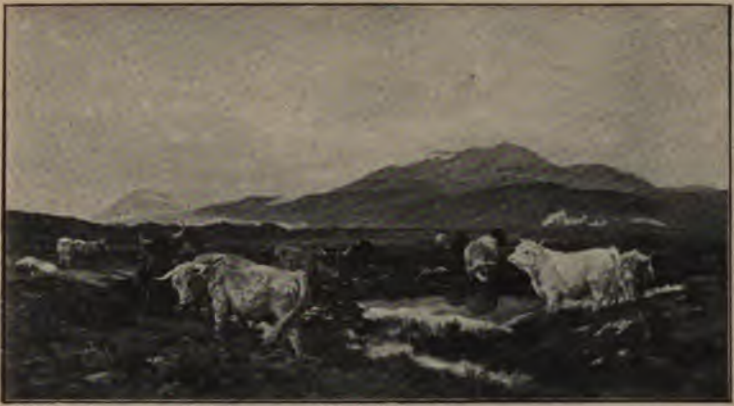
Purchased in 1879. Canvas, 84 in. x 67 in.



49 After the Storm, Norwegian Coast. By Professor Hans F. Gude.

Hans Frederick Gude was born in Christiania in 1825. He studied under Andreas Achenbach, and at the Düsseldorf Academy, where he became Professor in 1854. In 1880 he went as Professor to the Berlin Academy. He has gained many medals, and is a member of various continental Academies.

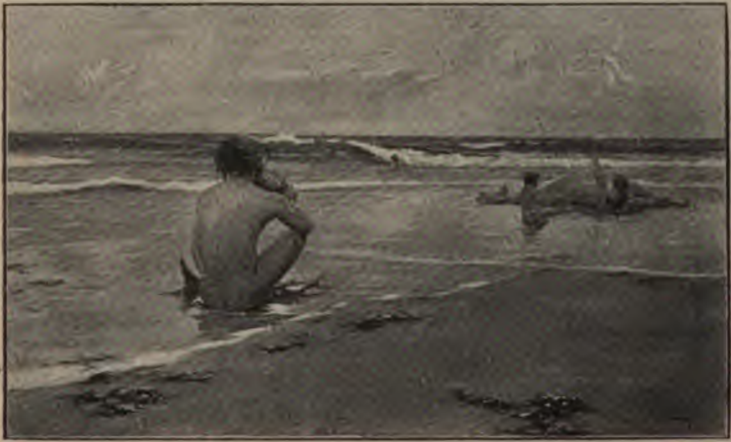
Presented by R. Molesworth Greene, Esq., in 1889.
Canvas, 56 in. x 96 in.



50 Ben Eay, in Sunset Glow. By H. W. B. Davis, R.A.

Mr. Davis was born at Finchley in 1833. He matriculated at Oxford, but soon abandoned the University for his art studies. His "Returning to the Fold" was purchased by the Royal Academy under the terms of the Chantrey bequest. Mr. Davis was elected a member of the Royal Academy in 1877.

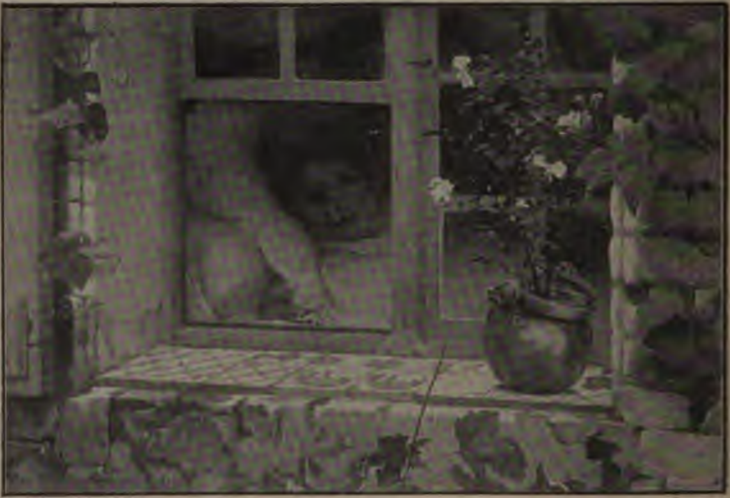
Purchased in 1883. Canvas, 48 in. x 84 in.



51 Sea Idylls. By Rupert C. W. Bunny.

Mr. Bunny, son of the late Judge Bunny, was born in Melbourne in 1864. He commenced his art studies under Mr. Folingsby at the National Gallery. In 1884 he proceeded to London to continue his studies, and subsequently to Paris, where he gained a *Mention Honorable* at the Salon of 1890.

Presented by Alfred Felton, Esq., in 1892. Canvas, 39 in. x 62 in.



52 The Convalescent. By F. Tattegrain.

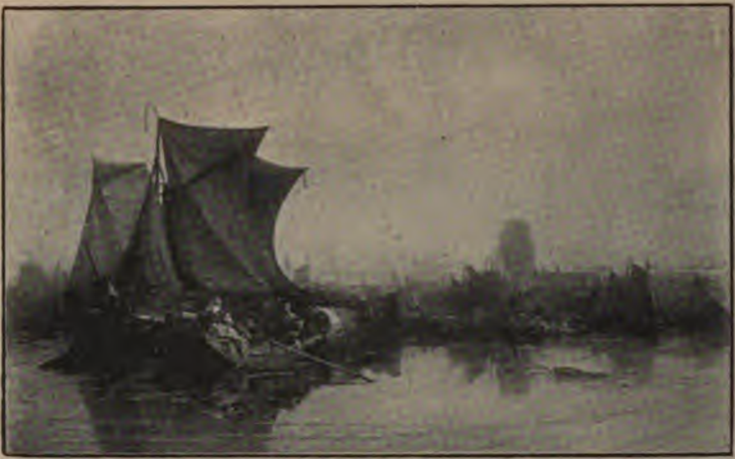
Francis Tattegrain was born at Péronne, France. He studied under C. Crauck, Lepic, Jules Lefebvre, and Boulanger. He is a *genre* and portrait painter, and engraver. This picture was exhibited in the Salon of 1884.

Presented by William Dean, Esq., in 1885. Canvas, 31 in. x 44 in.

53 In the Fields. By J. J. De Souza-Pinto.

The artist is a Portuguese, living in France. He was made "Hors Concours" at the International Exhibition of 1889. One of his pictures was purchased for the Luxembourg Museum in 1893.

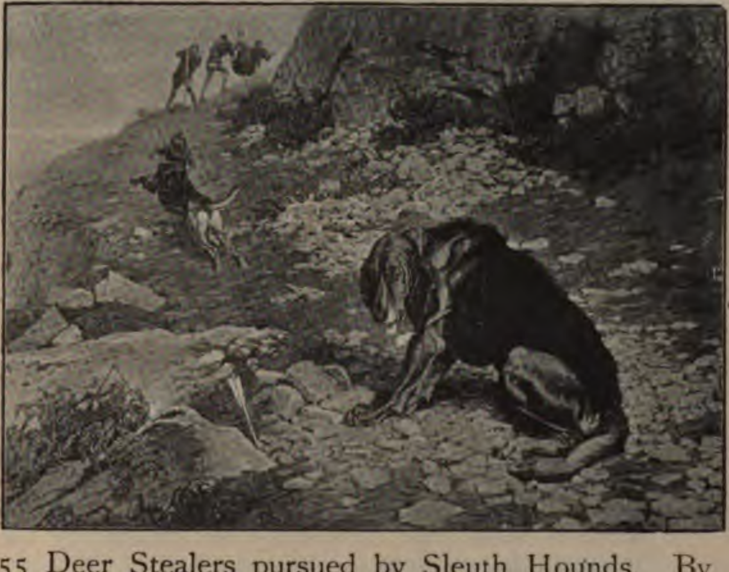
Purchased in 1893. Canvas, 36 in. x 29 in.



54 Rotterdam. By James Webb.

James Webb, a painter of sea pieces, first exhibited at London in 1850.

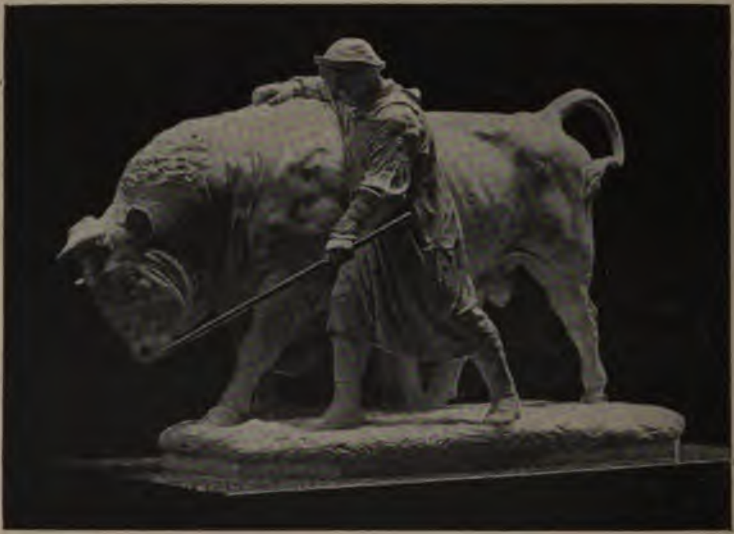
Purchased in 1869. Canvas, 78 in. x 120 in.



55 Deer Stealers pursued by Sleuth Hounds. By Briton Rivière, R.A.

Purchased in 1876. Canvas, 38 in. x 51 in.

SCULPTURE.



56 Young Bull and Herdsman (marble). By Sir J. E. Boehm, Bart., R.A.

Joseph Edgar Boehm was born at Vienna in 1834. He studied in most of the great European art centres, and finally settled in London in 1862. He was elected an Associate in 1878, and to full membership of the Royal Academy in 1882. In 1881 he was appointed Sculptor-in-ordinary to the Queen. He died suddenly in his studio in 1891. So unexpected was his death that he had informed his attendant he expected a visit from Her Royal Highness Princess Louise, who had formerly studied the art of sculpture under him. This statue was exhibited at the Royal Academy in 1887.

Purchased in 1888.

II.—The STAWELL GALLERY.

THE STAWELL GALLERY.

WATER-COLOUR DRAWINGS.

1 Countrymen at Dinner. By W. C. Stanfield, R.A.

Purchased in 1877. Size, 11 in. x 14 in.

2 Emily. By G. Campi.

Purchased in 1876. Size, 14 in. x 9 in.

3 The Haunt of Ancient Peace. By Constance Phillott.

Purchased in 1871. Size, 14 in. x 9 in.

4 Flower Painting. By Mrs. Ellis Rowan.

Mrs. Rowan, a native of Victoria, is to a great extent a self-taught artist. She has been awarded medals at several Exhibitions for paintings of Australian wild flowers.

Purchased in 1890. Size, 21 in. x 30 in.

5 Waimea Plains, near Nelson, New Zealand. By John Gully.

Purchased in 1870. Size, 8 in. x 15 in.

6 View near Corinth. Painter unknown.

Presented by James Ledger, Esq. Size, 8 in. x 13 in.

7 View on the River Yarra, near Richmond. By H. E. Davies.

Purchased in 1871. Size, 15 in. x 36 in.

8 A Gray Day on the Thames. By Walter Field.

Purchased in 1872. Size, 20 in. x 10 in.

9 Landscape, near Manaton, Devon. By W. S. Morrish.

Purchased in 1871. Size, 8 in. x 19 in.

10 View of King's College, Cambridge. By G. R. Clarke.

Purchased in 1875. Size, 15 in. x 24 in.

11 Flower Painting. By Mrs. Ellis Rowan.

Purchased in 1890. Size, 21 in. x 30 in.

12 Wreck off Kentish Coast: Lugger going out. By W. W. May.

Purchased in 1883. Size, 20 in. x 30 in.

13 Miss Hardcastle. By John Parker, R.W.S.

Purchased in 1892. Size, 15 in. x 21 in.

14 Dunglass, on the Clyde. By W. L. Leitch.

Purchased in 1891. Size, 19 in. x 11 in.

15 The Farm. By E. H. Fahey, R.I.

Edward H. Fahey was born in London in 1844. He studied at the Royal Academy, and was elected a member of the Institute of Painters in Water-Colours in 1875.

Purchased in 1892. Size, 15 in. x 22 in.

16 Sunset, Cannock Chase. By Bernard Evans, R.I.

Mr. Evans was born in Birmingham in 1848, and is the son of the decorative Gothic designer, Walter Swift Evans. He received his first instruction in art from Samuel Lines, a well-known teacher in Birmingham in those days, and subsequently studied at the Birmingham School of Art. During the last five years Mr. Evans has been busy painting the Abbeys of Yorkshire. Two of his works are in the Sydney Gallery.

Purchased in 1883. Size, 30 in. x 52 in.

17 Changing Pasture. By A. W. Weedon, R.I.

Purchased in 1892. Size, 22 in. x 36 in.

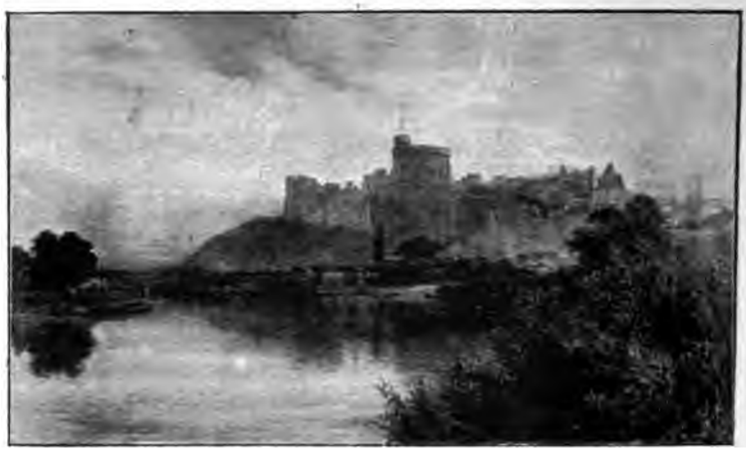
18 Fishing Boats, Rhyl. By C. E. Herne.

C. E. Herne was a Sydney amateur painter in water-colours, who went to London some years ago, where he became instructor in water-colour drawing to the daughters of H.R.H. the Prince of Wales. Three of his works are in the National Art Gallery of New South Wales. He died in 1894.

Purchased in 1892. Size, 19 in. x 30 in.

19 Boscastle Harbour. By Walter Severn.

Presented by the Artist in 1885. Size, 22 in. x 51 in.



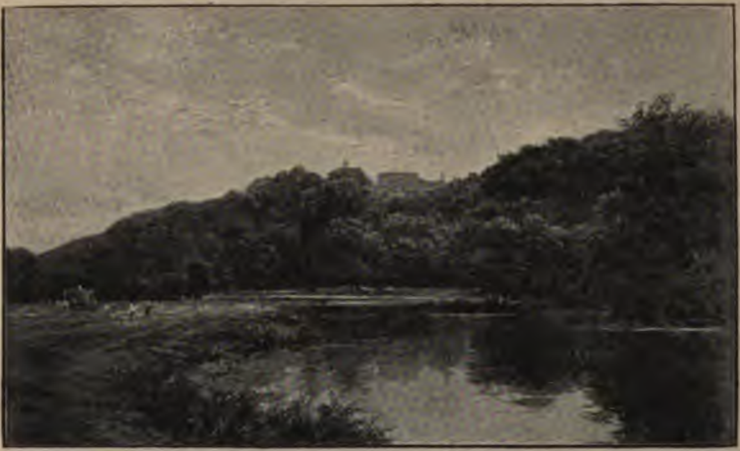
20 Windsor Castle. By David Law, R.P.E.

Mr. Law, a landscape painter and etcher, exhibited many works at the Royal Academy and Suffolk Street Exhibitions since 1869. Five of his works are in the New South Wales Gallery.

Purchased in 1883. Size, 30 in. x 48 in.

21 Death of Jean Goujon. By Edward Henry Wehnert.

Purchased in 1874. Size, 30 in. x 42 in.



22 Cliveden, on the Thames. By David Law, R.P.E.

Purchased in 1883. Size, 30 in. x 52 in.

23 Morning, Lake Omeo, North Gippsland. By John Mather.

Mr. Mather was born in 1848, at Hamilton, Scotland, where he commenced his art studies, which he continued subsequently at Edinburgh, coming to this colony in 1878. He became President of the Victorian Artists' Society in 1892, and was appointed a Trustee of the Public Library in 1893. Two of his works—"A Sketch" and "Mossman's Bay"—are in the Sydney Gallery.

Purchased in 1891. Size, 19 in. x 35 in.

24 Venice (Evening). By E. Wake Cook.

Mr. Cook was a student of the Melbourne National Gallery under Mr. Von Guerard. He has for many years been practising his profession in London, where his works have been shown at the Royal Academy and other exhibitions.

Purchased in 1892. Size. 20 in x 30 in.

25 The Tide of the Solway. By G. L. Hall.

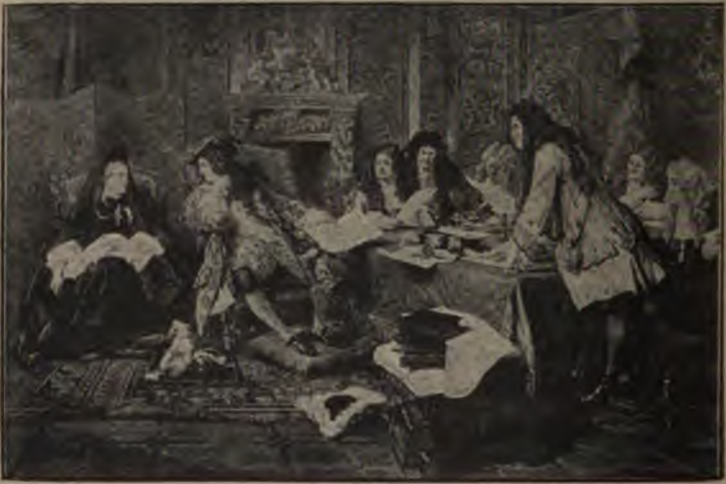
Purchased in 1879. Size, 21 in. x 48 in.

26 The Boundary, Snowy Mountains, New Zealand. By John Gully.

Purchased in 1870. Size, 30 in. x 54 in.

27 Lake Wanaka and Mt. Aspiring, New Zealand. By James Crowe Richmond.

Purchased in 1872. Size, 26 in. x 40 in.



28 Louis XIV., transacting business with his Ministers in the Apartment of Madame de Maintenon. By Sir John Gilbert, R.A., R.W.S.

Sir John Gilbert was born at Blackheath, Kent, in 1817. He is self-taught, with the exception of a few lessons from George Lance. This artist began as an illustrator for newspapers and books. He was elected R.W.S. in 1853, and R.A. in 1876.

Purchased in 1881. Size, 27 in. x 40 in.

29 The Wreck. By H. E. Davies.

Purchased in 1871. Size, 24 in. x 36 in.

30 Glen Falloch. By A. W. Weedon.

Purchased in 1883. Size, 17 in. x 29 in.

31 Croixelles Harbour, near Nelson, N.Z. By John Gully.

Purchased in 1870. Size, 15 in. x 8 in.

32 Corrie Echen, Highlands of Scotland. By T. M. Richardson.

Purchased in 1880. Size, 30 in. x 26 in.

33 Cottage Scenery. By T. J. Watson.

Purchased in 1871. Size, 13 in. x 9 in.

34 Japanese. By G. Campi.

Purchased in 1876. Size, 14 in x 10 in.

35 Un Vecchio Cappuccino. By G. Guardabassi.

Purchased in 1883. Size, 6 in. x 5 in.

36 Temple of Minerva. By Gigli.

Purchased in 1883. Size, 21 in. x 15 in.

37 The Matador. By G. Guardabassi.

Purchased in 1883. Size, 18 in. x 13 in.

38 Temple of Vesta. By Gigli.

Purchased in 1883. Size, 14 in. x 21 in.

39 L'Elemosina. By G. Guardabassi.

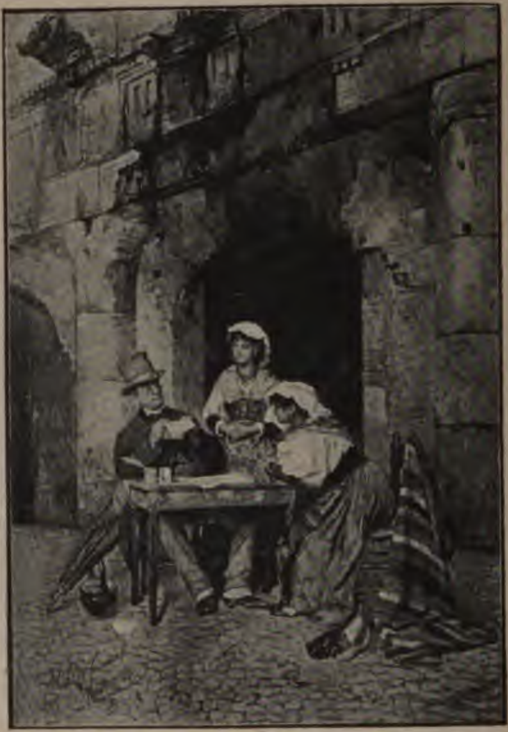
Purchased in 1883. Size, 21 in. x 13 in.

40 One of the Falls on the Apsley, New South Wales. By Conrad Martens.

Purchased in 1873. Size, 18 in. x 26 in.

41 The Nephew. By Provaggi.

Purchased in 1876. Size, 7 in. x 11 in.



42 The Public Writer. By P. de Tommasi.

Purchased in 1881. Size, 40 in. x 30 in.

43 Loch Avon, Highlands of Scotland. By James Giles, R.S.A.

James Giles, a Scottish landscape painter, was born in Glasgow in 1801. In 1830 he was elected a member of the Royal Scottish Academy. A picture by him, entitled "The Weird Wife," is in the National Gallery of Scotland. He died in 1870.

Purchased in 1871. Size, 17 in. x 26 in.

44 The Minstrel. By Provaggi.

Purchased in 1876. Size, 10 in. x 14 in.

45 Una Vecchia che Fila. By G. Guardabassi.

Purchased in 1883. Size, 22 in. x 15 in.

46 The Colosseum. By Gigli.

Purchased in 1883. Size, 21 in. x 15 in.

47 The Venetian Senator. By G. Guardabassi.

Purchased in 1883. Size, 18 in. x 13 in.

48 Goldsmith's Arch. By Gigli.

Purchased in 1883. Size, 14 in. x 21 in.

49 Admiral Blake, with a Squadron of five Ships, Blockading the Royalist Fleet under command of Prince Rupert in the Tagus, 1650. By Sir O. W. Brierly, R.W.S.

Sir O. W. Brierly, marine painter to the Queen, was born at Chester. He has cruised in different parts of the world for eleven years. He was on board H.M.S. "*Rattlesnake*" (Captain Owen Stanley) during her surveys of the Great Barrier Reef of Australia, the Louisiade Archipelago, and part of New Guinea; and in the "*Meander*," with Captain Keppel, visited New Zealand and other places. In 1867 he accompanied H.R.H. the Duke of Edinburgh in his voyage round the world in the "*Galatea*," and his sketches of the cruise were exhibited at South Kensington. He has painted many historical and marine pictures, and is at present Curator of the Painted Hall, Greenwich. He was knighted in 1886. Four of his works are in the Sydney Gallery.

Purchased in 1881. Size, 28 in. x 45 in.

OIL PAINTINGS.

50 Copy of Van Dyck's "Portraits of a Lady and her Daughter." By Aby Altson.

Presented in 1892 to the Trustees, under the terms of the Travelling Scholarship awarded to Mr. Altson in 1890. The original is in the Louvre.

Canvas, 52 in. x 78 in.

51 Copy of Velasquez's "Æsopus." By John Longstaff.

Presented to the Trustees under the terms of the Travelling Scholarship awarded to Mr. Longstaff in 1887. The original is in the Madrid Gallery.

Canvas, 36 in. x 70 in.

52 Copy of Velasquez's "Los Borrachos" (The Topers). By E. P. Fox.

The original is in the Madrid Gallery.
Purchased in 1893. Canvas, 65 in. x 88 in.

BLACK AND WHITE DRAWINGS.

53 Flight into Alexinaty during the Servian War (from *The Graphic*). By C. Gregory, R.W.S.

Purchased in 1881. Size, 19 in. x 27 in.

54 Colliery Explosion—the Rush to the Pit's Mouth (from *The Graphic*). By C. J. Staniland, R.I.

Purchased in 1881. Size, 19 in. x 25 in.

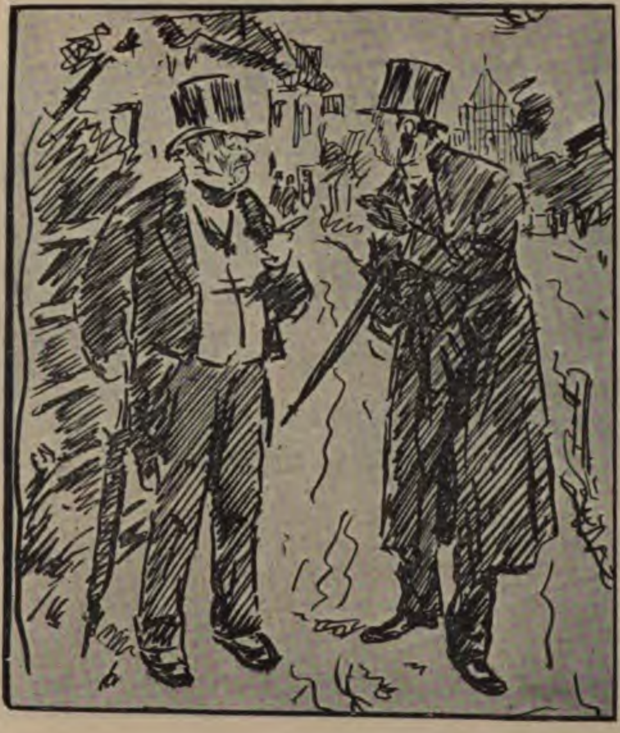
55 Speeches to be Lived Down if Possible (from *Punch*). By George Du Maurier.

George Du Maurier was born in Paris in 1834, but is a British subject. In England he first began to draw on wood for *Once-a-Week* and the *Cornhill Magazine*, subsequently joining the *Punch* staff.

Purchased in 1892. Size, 7 in. x 7¾ in.

56 Portrait of Sir John Millais, R.A. (from *The Graphic*). By Leslie Ward.

Purchased in 1881. Size, 13 in. x 10 in.



57 Management (from *Punch*). By Charles Keene.

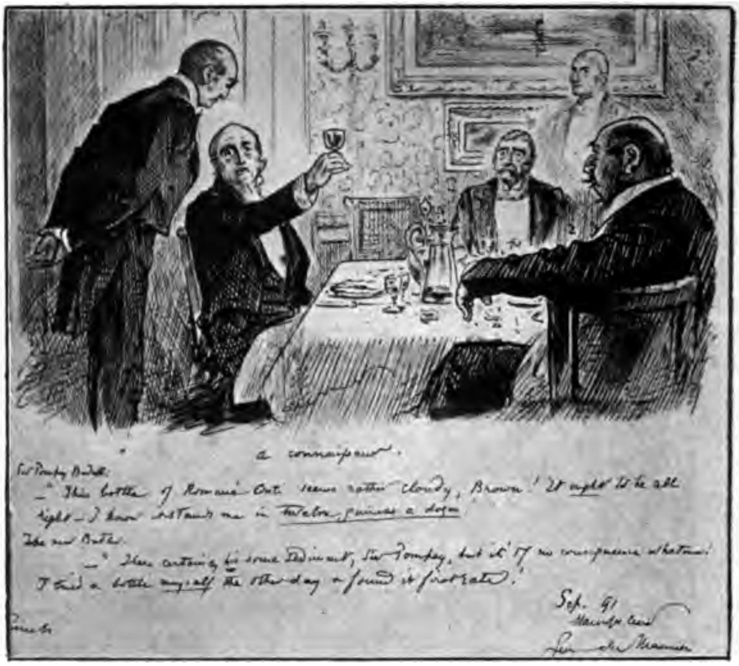
Charles Keene, one of the greatest of "black and white" artists, was born in London in 1823. He commenced to illustrate for *Punch* in 1854, and almost up to his death in 1891 was a regular contributor.

Purchased in 1892. Size, 4 in. x 4 in.

58 The Deserter (from *The Graphic*). By Frank Holl, R.A.

Frank Holl, who was born in London in 1845, died in 1891. He studied under his father, who was an engraver, and also at the Royal Academy. He was distinguished as a portrait and figure painter.

Purchased in 1881. Size, 28 in. x 21 in.


a connoisseur.
Sir Pompey Bedell:
— "This bottle of Romanée Conti seems rather cloudy, Brown! It ought to be all right — I know it stands me in twelve guineas a dozen."
The new Butler:
— "Has certainly a little sediment, Sir Pompey, but it's of no consequence whatever! I tried a bottle myself the other day & found it first rate!"
Sep. 91

59 A Connoisseur (from *Punch*). By George Du Maurier.

Purchased in 1892. Size, 7 in. x 7 in.

60 Portrait of Edward Bulwer, Lord Lytton of Knebworth (from *The Graphic*). By D. Laugée.

Purchased in 1881. Size, 16 in. x 13 in.

61 Holiday Time—Afloat (from *The Graphic*). By Charles Green, R.I.

Purchased in 1881. Size, 18 in. x 26 in.

62 Sunday Afternoon in a Picture Gallery (from *The Graphic*). By Charles Green, R.I.

Purchased in 1881. Size, 15 in. x 20 in.

ETCHINGS.

Nos. 63 to 78.

The following sixteen etchings, by James McNeill Whistler, were purchased for the National Gallery in 1892 by Professor Herkomer.

Mr. Whistler was born at St. Petersburg in 1834, and though American by parentage, is to a great extent French by education and habit. He studied under Gleyre at Paris, where he published his first etchings in 1857. The set belonging to this Gallery was executed and produced for the most part in 1859, since which time he has resided in London. He has painted many portraits and colour arrangements. The most famous, perhaps, of the former, a portrait of his mother, was purchased for the Luxembourg Gallery by the French nation, which has bestowed upon him several medals, and decorated him with the Légion d'honneur.

63 Wapping Wharf, with Boats and Buildings. 1859.

64 Ships and Barges on the Thames.

65 Italian Musician with Violoncello.

66 The Forge, with Workmen.

67 Eagle Wharf. Thames and Ships. 1859.

68 Wharf Interior, with distant View of Thames. 1859.

69 Black Lion Wharf, on Thames. 1859.

70 Millbank Prison and River Thames.

71 The Pool, River Thames. 1859.

72 Westminster Bridge, and Houses of Parliament in the distance. 1859.

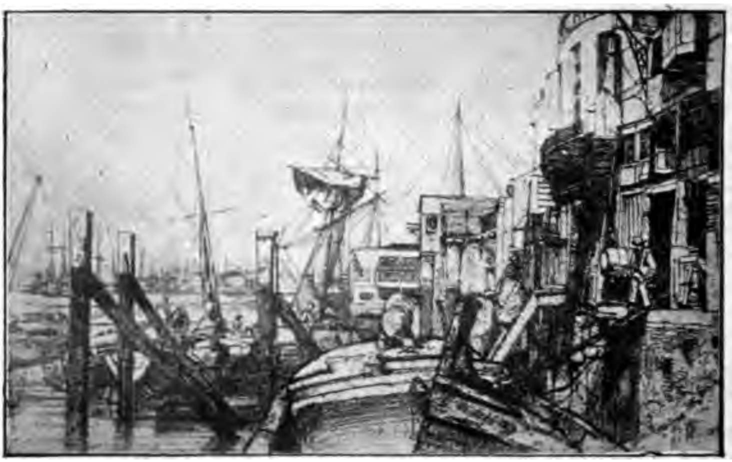
73 Early Morning, Battersea.

74 Wapping, on Thames, with Smokers. 1860.

75 Chelsea Suspension Bridge, with Steamboats.

76 Hores' Wharf and Thames Warehouses. 1859.

77 Chelsea Bridge and River Boats.



78 London Warehouses and Shipping. 1859.

Nos. 79 to 90.

The next twelve etchings, by Seymour Haden, C.M.G., were purchased from the Seymour Haden Collection in 1892 by Professor Herkomer.

Seymour Haden, the son of a distinguished physician, was born in London in 1818, and brought up to his father's profession, which he has successfully followed for many years.

In 1859, having been ordered a complete rest from professional work, he turned his attention to etching, and almost immediately after the publication of his first portfolio in Paris was recognised as a master in this art. On the foundation of the Royal Society of Painter Etchers in 1880, he was elected its President, and at the Paris Exhibition of 1889 he gained the only gold medal awarded for etching.

79 Whistler's House at Old Chelsea. 1863.

80 Sunset in Ireland. 1863.

81 Morning at Egham, Surrey. 1859.

"The Lark at Heaven's gate sings."

82 Sunset on the Thames. Second state. 1865.

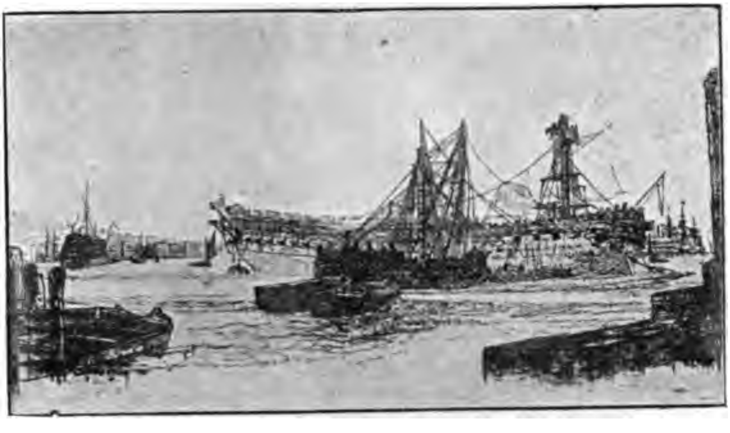
83 Shere Mill Pond. 1860. Large plate.

"Shere Mill Pond, with the single exception of one plate by Claude, is the finest etching of a landscape subject that has ever been executed in the world."—P. G. HAMERTON.

84 Early Morning at Richmond, England.

85 Windmill Hill (Dorsetshire). No. 1. 1877.

86 Kensington Gardens. 1860. Large plate.



87 Hulk of the Agamemnon. 1870.

88 Little Pier of Calais. 3 a.m. 1865.

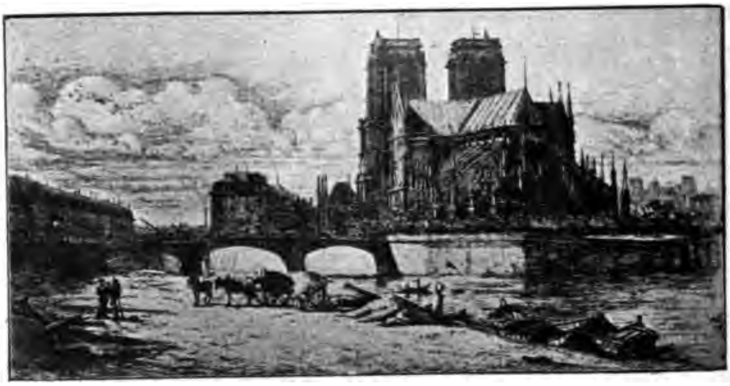
89 Sonning Alms Houses.

90 The Little Boathouse. 1877.

Nos. 91 to 96.

Six etchings, by C. Méryon, purchased by Professor Herkomer in 1891.

> Charles Méryon, who was born at Paris in 1821, entered the Naval School of Brest in 1837, and as a naval officer journeyed, among other places, to New Caledonia, where he made some interesting sketches, which he engraved on his return to France. He afterwards studied etching under M. Eugène Bléry, and devoted himself entirely to this art, but in spite of his excellence, now admitted, he never felt himself appreciated. He fell into a misanthropy which at length rendered him insane, and died in the pauper madhouse at Charenton in 1868.



91 L'Abside de Notre Dame.

First state before letters.

92 Le Stryge.

> "Insatiable vampire l'eternelle Luxure
> Sur la Grande Cité convoite sa pâture."

93 Le Petit Pont.

94 St. Etienne du Mont. First state.

95 La Pompe. Notre Dame. 1852. First state.

96 Ruins of Pierrefonds.

Etched during Méryon's madness.

97 Méryon Mad. 1858. Proof before letters.

Reproduction of a drawing by Leopold Flameng.

Nos. 98 to 108.

Eleven etchings, by Rembrandt, purchased by Professor Herkomer at the Seymour Haden sale in 1891.

Paul Rembrandt, the greatest of Dutch painters, was born at Leyden in 1606 or 1607, but lived and worked as painter and etcher in Amsterdam from 1630 till his death in 1669.

98 Beggars at the Door of a House. 1648.

99 The Three Trees. 1643.

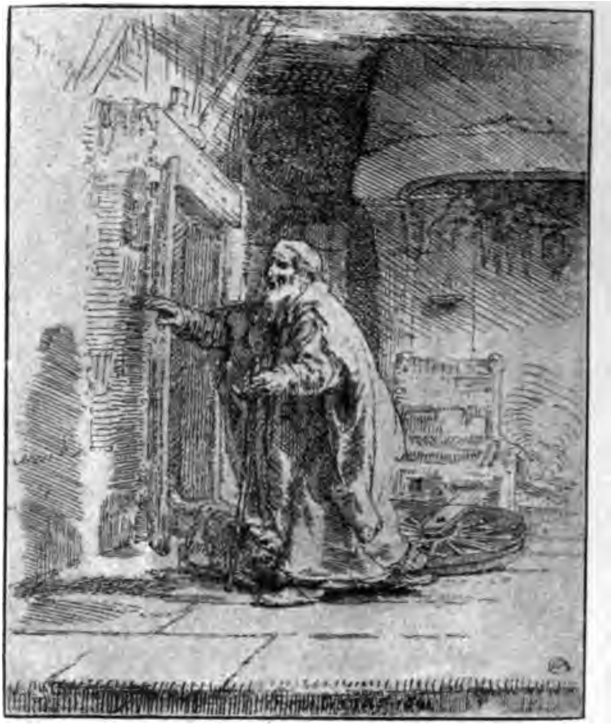
100 Rembrandt leaning on a Stone Sill. 1639.

101 Bust of an Old Woman.

102 Christ and the Disciples at Emmaus. 1654.

103 Christ Healing the Sick. 1650. Second state.

Called the "Hundred Guilder" print, because Rembrandt sold a proof of it for that sum (£8 15s.).



104 Tobit Blind. 1651.

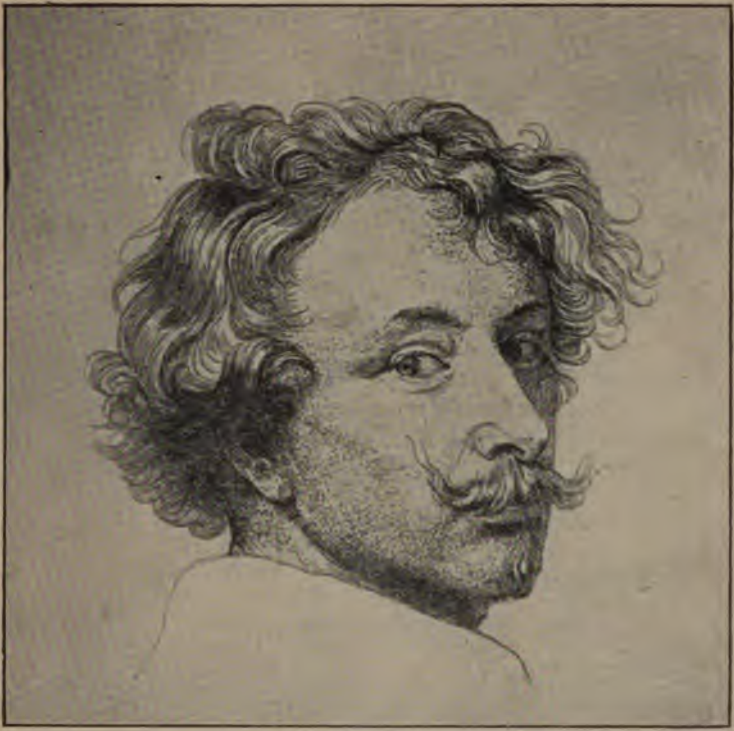
105 The Goldweigher's Field. 1651.

The village on the hillside is Naarden; the country house that of the banker, Wtten Voogaert, four leagues from Amsterdam, and near the Zuyder Zee.

106 Resurrection of Lazarus. 1642. The small print.

107 Jan Cornelius Sylvius. 1638.

108 A Young Man Musing. 1637.



SIR ANTHONY VAN DYCK.

Nos. 109 to 111.

Three etchings, by A. Van Dyck, purchased by Professor Herkomer at the Seymour Haden sale in 1891.

Sir Anthony Van Dyck was born at Antwerp in 1599, and studied as pupil and assistant in the studio of Rubens. After spending some years in Europe he returned to Antwerp in 1627, where in the next three years he produced, amongst many religious works, the only ten etchings known as his, nearly all of them portraits of his friends. Three of them are in this Gallery. In 1632 he was invited to the Court of Charles I., where, in the same year, he was knighted, and made Court Painter. He died at Blackfriars, London, in 1641.

109 Portrait of Judocus Momper.

110 Portrait of himself.

111 Portrait of Francis Frank.

Nos. 112 to 114.

The following three copperplate engravings, by A. Dürer, were purchased by Professor Herkomer at the Seymour Haden sale in 1891.

Albrecht Dürer was born at Nuremberg in 1471, and commenced life, under his father's tuition, as a goldsmith. His talents as an artist soon developed, and he was placed under several masters. He spent some years in travel, making the acquaintance and enjoying the friendship of Raphael and the most eminent artists of his day. His fame rests equally upon his engravings and his paintings. He died at his birth-place in 1528.

112 The Knight, Death, and the Devil. 1513.

113 Melancholy. 1514.

114 St. Jerome in the Cell. 1514.

WATER-COLOUR DRAWINGS.

115 "When Snow and Ice are gone." By R. Meyerheim.

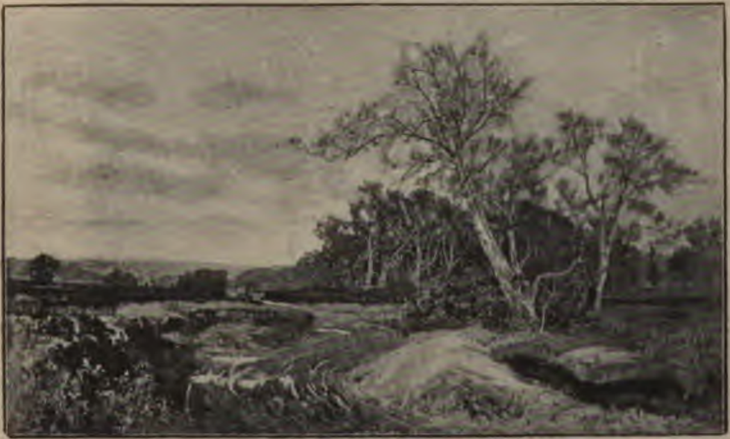
Professor Herkomer writes of this work:—"Here the water-colour medium is treated by a 'washing' technique to give more gradations to the tones, and to carry out the aim of the artist, which is to make cattle blend into a landscape as if they were a part of it. The tone is greyer than we English painters should see in nature. The artist's Düsseldorf influence has not yet left him, but he finds the longer he remains in England the more he absorbs the beauty of our *light*, and consequently finds himself gradually approaching English Art. The beauty of the picture lies in its delicacy of treatment and gracefulness of drawing."

Purchased by Professor Herkomer in 1891. Size, 24 in. x 37 in.

116 The Breadwinners. By L. Smythe, R.W.S.

Professor Herkomer says:—"This picture represents a school originated by Mr. J. W. North, and perfected by Fred. Walker. The method of work is 'blottesque,' and the attempt (decidedly successful in this case) is to get the shimmer of light in nature, which effect, according to this painter's feelings, somewhat disturbs all outline; hence a tendency to unrest in the picture. But it is full of tender colour and faith in the simplest aspect of nature. It represents, partly through its technique, and partly through the treatment of the subject, a distinct type of art, worthy of study; for, although it belongs to a school, it is decidedly imbued with the strongest idiosyncrasy of the artist."

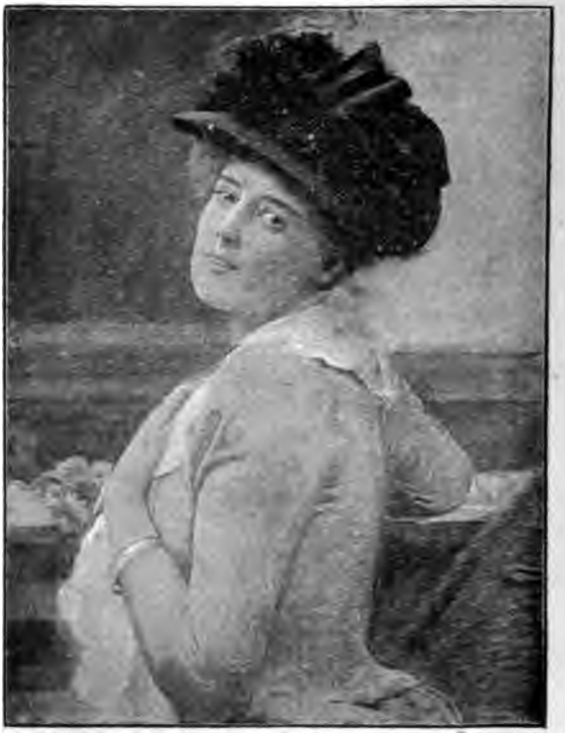
Purchased by Professor Herkomer from the Royal Academy in 1891. Size, 24 in. x 19 in.



117 The Road that Skirts the Common. By John M. Bromley.

Purchased in 1892. Size, 30 in. x 48 in.

PASTEL DRAWING.

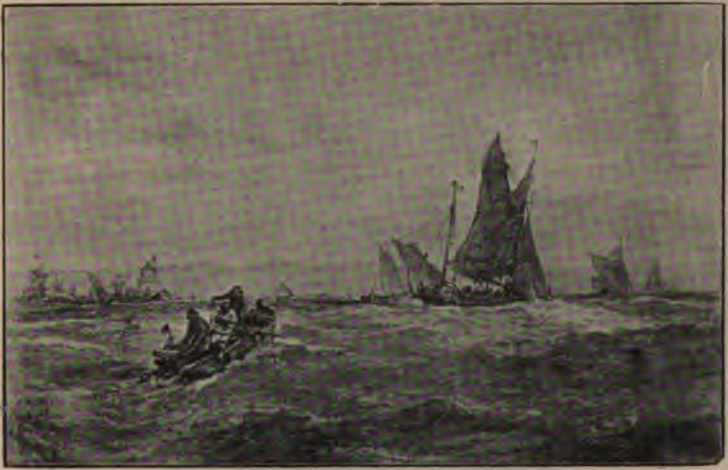


118 "The Leaves of Memory seemed to make a Mournful Rustling." By Solomon J. Solomon.

Mr. Solomon was born in London in 1861. He studied at the Royal Academy and at Paris under Cabanel, Bouguereau, and Fleury. He is a figure and portrait painter. The Ballarat Fine Arts Public Gallery purchased in 1888 one of his works, entitled "Ajax and Cassandra."

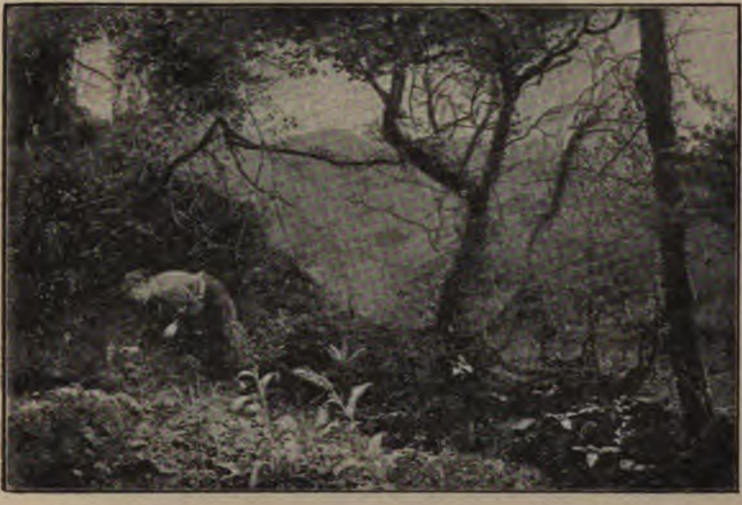
Purchased in 1892. Size, 30 in. x 22 in.

WATER-COLOUR DRAWINGS.



119 Fishing Vessels off Granton. By Edwin Hayes, R.I.

Purchased in 1892. Size, 21 in. x 31 in.



120 The Little Copse on the Hill; a Dead Rabbit. By J. W. North, A.R.A., R.W.S

Purchased by Professor Herkomer in 1892. Size, 22 in. x 15 in.

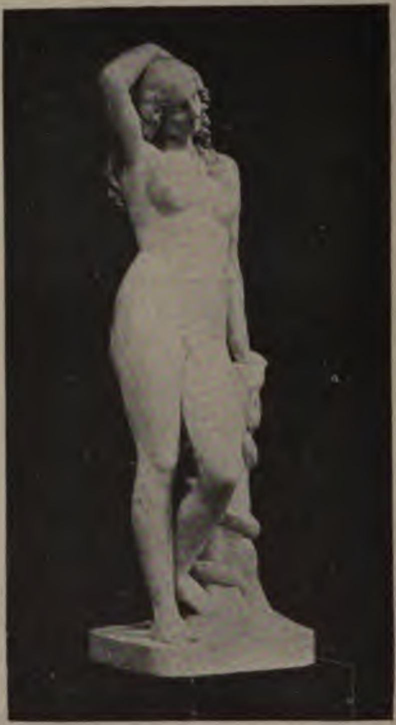
121 Oxford. By A. Pugin.

Purchased in 1877. Size, 11 in. x 8 in.

122 Sunset, Mount Earnslaw, New Zealand. By Samuel Hingston.

Presented by the Artist in 1886. Size, 10 in. x 20 in.

SCULPTURE.

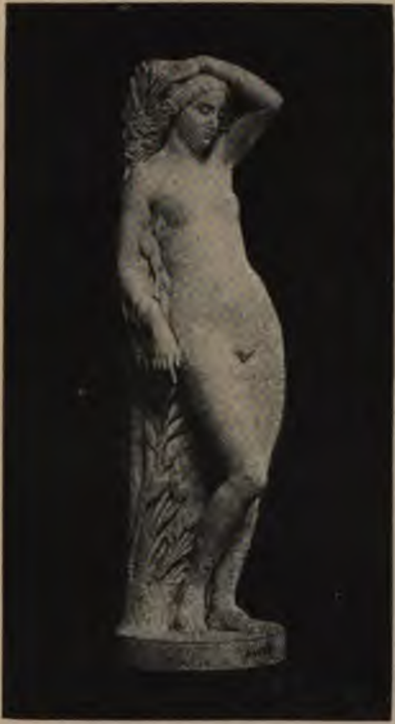


123 Eve. By Patrick MacDowell, R.A.

Patrick MacDowell, who was born in 1799, died in London in 1870. In 1830 he was admitted a student in the

Academy Schools. In 1841 he was elected an Associate of the Academy, and in 1846 a full Member.

Purchased in 1877.



124 Daphne. By Marshall Wood.

Purchased in 1877.

BRONZE STATUETTES.

125 Sécurité. A reproduction by A. Dubucand of E. Delaplanche's statue.

Purchased in 1891.

126 An Archer. By T. Uphues.

Purchased in 1890.

127 Half-draped Female Figure. By A. Brütt.

Purchased in 1889.

III.—THE VESTIBULE.

Nos. 1 to 12.

On the 17th May, 1893, a letter was received from the Agent-General announcing that Her Majesty the Queen had been pleased to present to the National Gallery of Victoria a collection of etchings then on view at the Exhibition being held in Melbourne by the Royal Anglo-Australian Society of Artists.

These works, seven of which were etched by the Queen and five by the Prince Consort, are now hung in the Vestibule.

1 The Princess Royal. By the Queen.

2 Pigeons. By H.R.H. the Prince Consort.
After a picture by Verboeckhoven.

3 Frederick III., Elector of Saxony. By H.R.H. the Prince Consort.
After a drawing by Lucas Cranach.

4 Princess Adelaïde of Hohenlohe-Langenbourg. By the Queen.

5 The Princess Royal. By the Queen.

6 Head of a Dachshund. By H.R.H. the Prince Consort.

7 Prince Alfred. By the Queen.

8 The Queen's Skye Terrier, "Islay." By the Queen.

9 The Princess Royal in Fancy Dress. By the Queen.

10 Old Women. By H.R.H. the Prince Consort.
After Landseer.

11 Eagles. By H.R.H. the Prince Consort.
After H. Carracci.

12 The Princess Royal in Fancy Dress. By the Queen.

OIL PAINTING.

13 Portrait of Her Majesty the Queen. By Professor Herkomer, R.A., R.W.S.

Professor Herkomer was born in Bavaria in 1849. Studying at Southampton, South Kensington, and Munich, he was much hindered in his art education by ill-health and poverty. In 1875 he was brought prominently into notice by his memorable picture of the Chelsea pensioners—"The Last Muster"—which was awarded, at the Paris Exhibition of 1878, one of two medals of honour carried off by the English School. He was elected an R.A. in 1890. Mr. Herkomer is well known as a "black and white" illustrator and an etcher, and excels equally in landscape and portrait painting, in oil or water colours. "The Chapel of the Charter House" and "Found" were purchased by the Royal Academy under the terms of the Chantrey Bequest. This picture was painted for the Melbourne National Gallery from Gilbert's statue of the Queen erected in 1887 at Winchester. Mr. Herkomer is Slade Professor of Fine Art at Oxford.

Purchased in 1892. Canvas, 93 in. x 57 in.

ETCHINGS.

Nos. 14 to 25.

A set of twelve etchings, by Max Klinger, purchased by Professor Herkomer in 1891.

14 Death as the Saviour.

15 Night.

16 The Peasant.

17 The Highway.

18 Herod.

19 On the Rails.

20 To the Beautiful in Nature.

21 The Child.

22 Mother and Child.

23 The Poor Family.

24 Sailors.

25 The Sea.

IV.—THE McARTHUR GALLERY.

OIL PAINTINGS.

1 Life and Death of a Rose. By William Ford.

William Ford, a painter of enamels, exhibited several works at the Academy and Suffolk Street Exhibitions between 1846 and 1864.

Presented by the Victorian Academy of Arts in 1883. Canvas, 12 in. x 18 in.

2 Horses and Pigs. By John Frederick Herring.

John Frederick Herring commenced life as a sign and house painter, and at one time drove a mail coach. His works were very popular in England, and the lithographic prints of his racing and coaching pictures are well known. Herring died in 1865.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 14 in. x 24 in.

3. Still Life Study. By Albert Arnz.

Albert Arnz was born at Düsseldorf in 1832. He studied at the Düsseldorf Academy under his brother-in-law, Oswald Achenbach. He paints landscapes, his subjects being chiefly taken from Rome and Naples, although he has also painted views in Westphalia and the Nether Rhine countries.

Purchased at the Centennial International Exhibition, 1888. Panel, 20 in. x 17 in.

4 Ben Lawers. By Frederick Richard Lee, R.A.

Ben Lawers is a mountain in Perthshire, on the north-east side of Loch Tay.

Frederick Richard Lee, beginning life as a soldier, in 1818 resolved to devote himself to art. He entered the Royal Academy, where he exhibited in 1824, and for nearly fifty years subsequently. He was elected an R.A. in 1838. Several of his pictures are in the National Gallery, London. The Victorian Gallery possesses two of his works—the one named above, and "River, Mill, and Farm." His pictures were chiefly landscapes, but in later years he exhibited some successful sea-pieces. He died in Cape Colony in 1879.

Presented by the Artist in 1872. Canvas, 13 in. x 18 in.

5 Harvest Waggon. By George Cole.

George Cole was born at Portsmouth in 1810. Apprenticed to a ship painter, his success in executing several large canvas advertisements for the proprietor of a travelling circus induced him to adopt art of a higher kind as a profession. He was elected Vice-President of the Society of British Artists in 1878.

Purchased in 1870. Canvas, 17 in. x 25 in.

6 Cape Gris Nez, North Coast of France. By Eugene P. Cecchini.

Presented by the Hon. C. J. Ham in 1882. Canvas, 24 in. x 34 in.

7 Fishing Boats leaving Boulogne Harbor. By Th. Weber.

Mr. Th. Weber, who paints pictures of the sea-coast, has contributed to the Royal Academy exhibitions between 1871 and 1873. He obtained medals at Rouen and London.

Purchased in 1884. Canvas, 28 in. x 48 in.

8 Flamborough Head. By Edwin Toovey.

Flamborough Head, a magnificent range of limestone rocks, extending along the Yorkshire coast for several miles, and in some places rising perpendicularly to the height of 150 yards.

Mr. Toovey, a landscape painter, first exhibited at Leamington in 1867, and subsequently at the Suffolk Street Exhibition.

Purchased in 1875. Canvas, 35 in. x 60 in.

9 Druidical Monuments at Dawn, in the Isle of Arran. By George Edwards Hering.

"In the glimmer of the dawn
They stand, the solemn silent witnesses
Of ancient days—altars or graves?"

George Edwards Hering was born in London in 1806, but educated in Germany for mercantile pursuits. He, however, studied art in the Italian and Bavarian schools, and, settling in London, frequently exhibited landscapes at the Royal Academy.

Purchased in 1872. Canvas, 35 in. x 55 in.

10 To the Workhouse. By Mrs. E. M. Boyd.

Presented by Mrs. Emma A'Beckett in 1893. Canvas, 36 in. x 24 in.

11 Evening Shadows, Otira Gorge, N.Z. By James Peele.

James Peele, who was born in London in 1846, came to Victoria with his parents in 1850. He followed business pursuits for many years, but since 1888 has devoted himself to painting—chiefly New Zealand scenery.

Purchased in 1891. Canvas, 37 in. x 60 in.

12 A Sheikh and his Son entering Cairo on their return from a Pilgrimage to Mecca. By Robert Dowling.

Robert Dowling, who was born in England in 1827, died in 1886. He came to Tasmania at an early age, and with his parents settled at Launceston. He early developed a taste for art, and finally proceeded to England to prosecute his studies there. Amongst his best-known works are the group of Aborigines of Tasmania, now in the Launceston Mechanics' Institute, and " A Sheikh and his Son entering Cairo."

Presented by Subscribers in 1878. Canvas, 54 in. x 26 in.

13 River, Mill, and Farm. By Frederick Richard Lee, R.A.

Purchased in 1868 by the Commissioners of Fine Arts for Victoria. Canvas, 44 in. x 72 in.

14 Arab Prisoners. By J. E. Hodgson, R.A.

John Evan Hodgson was born in London in 1831. He spent his early life in Russia. Returning to England, he entered the Royal Academy in 1855, exhibiting his first picture in the following year. He visited Tunis and Tangiers in 1868, and has since produced many pictures of Eastern life. He was elected an R.A. in 1879.

Purchased in 1871. Canvas, 36 in. x 72 in.

15 Summer Evening near Templestowe. By Louis Buvelot.

Louis Buvelot was born in 1814, in the Canton of Vaud, Switzerland, and died at Melbourne in 1888 He studied under Arloud, Wolmar, and Flirs. In 1834 he left Switzerland for Bahia, where he devoted himself to commercial pursuits for five years. Abandoning commerce, Mr. Buvelot went to Rio de Janeiro, where he attracted the notice of the Emperor Dom Pedro by a picture of a view in the vicinity of Rio. He was awarded a gold medal for this picture, and subsequently the order of La Rose was conferred upon him by the Emperor for his picture, "A Virgin

Forest." After fourteen years' residence in Brazil, Mr. Buvelot returned to Europe in 1851, where he practised his profession with success. His health compelled him to migrate to Australia in 1865, and on his arrival in Melbourne in that year his first pictures were "Winter Morning near Heidelberg," and "Summer Afternoon near Templestowe," both of which, along with another entitled "Waterpool at Coleraine," were purchased for the National Gallery. Mr. Buvelot was awarded a gold medal for his picture, "Wood's Point Road," at the London Exhibition, 1872-3, and a first prize for "A View of Gisborne" and "A Sea Piece," at the Melbourne Exhibition of 1875.

Purchased in 1869. Canvas, 30 in. x 38 in.

16 First Meeting between Henry VIII. and Anne Boleyn. By George Frederick Folingsby.

Mr. Folingsby was born in Ireland. He went to Canada when eighteen years of age, and subsequently to New York, where he studied drawing at the Academy at night, occupying the daytime in illustrating for *Harper's Magazine* and Cassell's American edition of the *Illustrated Magazine of Art*, of which he was for some time pictorial editor. After travelling in Asia Minor, Turkey, Greece, and most parts of Europe, he settled in Munich in 1852, where he studied drawing for two years at the Royal Academy. He then visited Paris, and entered the atelier of Couture for six months, when he returned to Munich and studied under Carl von Piloty for five years. Mr. Folingsby resided at Munich for over twenty years, painting historical incidents, and exhibiting in the Royal Academy and the principal European art exhibitions. He was awarded first-class medals for historical painting at the Vienna International Exhibition in 1873 and the Philadelphia Centennial Exhibition in 1876. He left Munich in 1879 for Melbourne, where he was appointed Director of the National Gallery in April, 1882, a position which he held until his death in January, 1891.

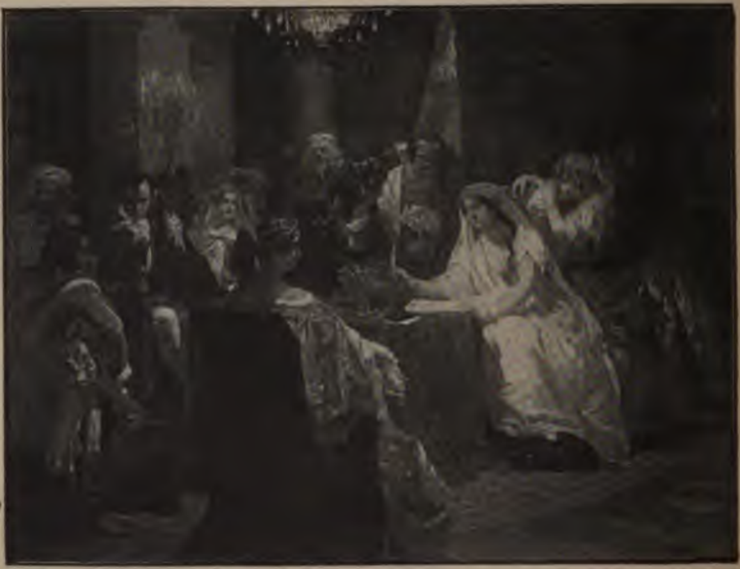
Purchased in 1879. Canvas, 61 in. x 47 in.

17 Moses bringing down the Tables of the Law. By John Rogers Herbert, R.A.

This is a replica of the original in the Peers' Robing Room in the House of Lords.

Mr. Herbert was born at Maldon, in Essex, in 1810. He became a student of the Royal Academy in 1826. At first he painted portraits and executed designs for book illustrations. He was elected an R.A. in 1846 (when he was commissioned to paint the frescoes for the new Houses of Parliament, executing amongst others "Moses Bringing down the Tables of the Law"), and a foreign corresponding member of the Académie des Beaux-Arts in 1870, in the room of the late Baron Leys. Mr. Herbert died in 1890.

Purchased in 1878. Canvas, 11 ft. 4 in. x 20 ft. 10 in.



18 Josephine Signing the Act of her Divorce. By E. M. Ward, R A.

This picture represents an event which took place in the Grand Cabinet of the Emperor Napoleon at the Tuileries on the evening of the 16th December, 1809.

Edward Matthew Ward, a nephew of the authors of *Rejected Addresses*, was born in London in 1816. He entered the Academy in 1835, and in the following year went to Rome, where he remained nearly three years. He studied fresco painting under Cornelius at Munich, and this study stood him in good stead when he was commissioned, in 1852, to paint eight historical frescoes for the corridor of the House of Commons. For some years before his death, which took place in 1879, Ward was subject to fits of depression, which culminated in insanity.

Purchased at the Centennial International Exhibition, 1888. Canvas, 51 in. x 65 in.

19 Valley of the Mitta Mitta, with the Bogong Ranges. By Eugene von Guerard.

The Mitta Mitta River and Bogong Ranges are situated in the north-east of Victoria.

Herr von Guerard is the son of a court painter to the Emperor Francis the First of Austria. After prosecuting his art studies at Florence, Milan, Venice, Naples, and the Royal Academy at Düsseldorf, he emigrated to Australia, where he painted numerous landscapes. In 1870 he was appointed Master and Curator of the National Gallery of Victoria, a position which he resigned in 1881 to return to Europe. His "Mount Kosciusko, seen from the Mount Hope Ranges, Victoria," is also in the National Gallery, Melbourne.

Presented by the Hon. Sir Archibald Michie in 1866. Canvas, 27 in. x 42 in.

20 Start Point Light, off the Coast of Devonshire. By William Melby.

Start Point is nearly the southernmost cape of Devon, and the spot last sighted by vessels outward bound from the Channel.

Purchased in 1871. Canvas, 37 in. x 63 in.

21 The Buffalo Ranges, Victoria. By Nicholas Chevalier.

The Buffalo Ranges is the name given to a tier of lofty mountains in the north-east of Victoria. These ranges may be said to form part of the Great Australian Alps.

Mr. Chevalier was born at St. Petersburg about 1830—his father being a Swiss and his mother a Russian—but took up his residence in London in 1873, exhibiting frequently at the Royal Academy. He resided in Melbourne for many years, and was for some time cartoon draughtsman of the *Melbourne Punch*, but accompanied the Duke of Edinburgh to England in the "*Galatea*," making drawings of objects and places of interest during the voyage. He painted, by order of the Queen, the "Thanksgiving Day Procession, February 27, 1873."

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 52 in. x 72 in.

22 Departure of the Pilgrim Fathers. By Charles West Cope, R.A.

This is the original picture from which was painted one of the eight frescoes in the Peers' Corridor in the Houses of Parliament at Westminster. It represents a number of voluntary exiles for conscience' sake taking their departure from Delft Haven to Southampton, where they joined another band of religious refugees bound for New England in the "*May Flower.*" "We are well weaned," wrote their minister, John Robinson, "from the delicate milk of the mother-country, and inured to the difficulties of a strange land: the people are industrious and frugal. We are knit together as a body in a most sacred covenant of the Lord, of the violation whereof we make great conscience, and by virtue whereof we hold ourselves strictly tied to all care of each other's good and of the whole. It is not with us, as with men, whom small things can discourage."
—Green's *History of the English People*, Vol. III., p. 168.

Charles West Cope, who died in October 1890, was born at Leeds in 1811. After a course of study at the

Royal Academy, he resided two years in Italy. In the fresco competition of 1844 his "Meeting of Jacob and Rachel" gained for him a commission to design one of the frescoes of the House of Lords. He was elected Associate of the Royal Academy in 1844, and R.A. in 1848, and was Professor of Painting at the Royal Academy from 1867 to 1874. "The departure of the Pilgrim Fathers" was painted in 1856.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 88 in. x 137 in.

23 Mount Kosciusko, seen from the Mount Hope Ranges, Victoria. By Eugene von Guerard.

Kosciusko is the highest mountain of the Australian Alps.

Purchased in 1870. Canvas, 42 in. x 60 in.

24 Entrance to Glen Etive, from near King's House. By Waller H. Paton, R.S.A.

Mr. W. H. Paton, a younger brother of Sir Noel Paton, is an artist comparatively self-taught, having been brought up as a banker, and has spent most of his professional life in Edinburgh. He has been a frequent contributor to the exhibitions of the Royal Scottish Academy and the Royal Academy.

Purchased in 1882. Canvas, 34 in. x 55 in.

25 Morning. By Franz Courtens.

Franz Courtens, a landscape and *genre* painter, was born at Termonde, Belgium.

Purchased in 1881. Canvas, 29 in. x 43 in.

26 *La Belle Yseult. By J. B. Bedford.

Yseult, Queen of Cornwall, who plays a prominent part in Tristram, one of the most beautiful of the romances of the Round Table.

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* At present on loan to the Bendigo Art Gallery.

J. B. Bedford was born in Yorkshire in 1823. He was a pupil of the Royal Academy, where he frequently exhibited portraits, landscapes, and ideal subjects.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Panel, 23 in. x 14 in.

27 *The Fern Gatherer. By R. Herdman, R.S.A.

Robert Herdman devotes himself to the history and romance of Scotland, and the portrayal of Scottish and Italian peasant life.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 27 in. x 23 in.

28 Jackson's Creek, near Sunbury. By Henry C. Gritten.

Jackson's Creek, or the Macedon River, has its source in several springs flowing from the foot of Mt. Macedon.

Mr. Gritten may be regarded as a Victorian artist, inasmuch as he acquired his reputation in this colony, where his works are well known.

Presented by the Hon. Sir Archibald Michie in 1866. Canvas, 24 in. x 36 in.

29 Checkmate. By C. M. Webb.

C. M. Webb, a painter of portraits, exhibited at the Suffolk Street Exhibition in 1829.

Purchased in 1870. Canvas, 21 in. x 26 in.

30 Watergate Bay. By John Mogford, R.I.

A scene at the little Bay of Watergate, near Towan, Cornwall.

John Mogford, who was born in London in 1821, died in 1885. He studied at the School of Design, Somerset House, under Mr. Dyce, and subsequently at the Royal Academy, where he obtained several prizes. In 1846 he exhibited his first picture in oils at the Academy, and from that time until 1865 he had always one or more pictures in the Exhibition. In 1866 he was elected a member of the

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* At present on loan to the Bendigo Art Gallery.

Royal Institute of Painters in Water-Colours. He was awarded a first prize at the Sydney International Exhibition, 1879, and some of his pictures are in the National Gallery of New South Wales.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 15 in. x 30 in.

31 Unlading Fishing Smacks, Coast of Normandy. By H. Koekkoek.

Presented by the late Canon Bromby, D.D., in 1889. Canvas, 19 in. x 31 in.

32 A Widow. By T. Chartran.

Théobald Chartran, who was born at Besançon, was a pupil of Cabanel. He won the Grand Prix de Rome in 1877.

Purchased in 1884. Canvas, 25 in. x 19 in.

33 In the Studio. By A. Van Schmidt.

Purchased in 1884. Panel, 11 in. x 10 in.

34 A Dream of Latmos. By Sir Noel Paton, R.S.A.

"Endymion sleeps. Upon his upturned brow
The gift of Jupiter—eternal youth—
Lies fresh as leaves that look upon the spring,
But one day old. And his sleep-heavy eyes
Are closed, and all is silent, save the heart
That still is beating ruddy strokes of life
For that fair vision, and that one desire
To shape itself and light up all his soul.
There is no stir on Latmos; every star
Can hear him breathing; for they too have seen
The dream beneath his eyelids."

ALEX. ANDERSON ("Surfaceman").

Sir Noel Paton was born in Dunfermline, Scotland, in 1821. He received his first instruction in drawing from his father, who was a designer of patterns. He afterwards studied at the Royal Scottish Academy, and the Royal Academy, London. Sir Noel received from the Commissioners of Decoration of Westminster Hall a prize of £20 for his cartoon, "The Spirit of Religion," and of £300 for his pictures, "Christ bearing the Cross" and "Reconciliation of Oberon and Titania," which latter the Scottish Academy purchased for the National Gallery at Edinburgh. He was knighted in 1867, upon being appointed Queen's Limner for Scotland.

Purchased in 1882. Panel, 25 in. x 25 in.

35 Scene in the North of England. By S. Glover.

Presented by William Malcolm, Esq., in 1870. Panel, 8 in. x 12 in.

36 The Monopolist. By R. W. Buss.

Buss, who was born in 1804, was apprenticed to his father, a London engraver. He executed designs for the *Penny Magazine*, Knight's *Shakespeare*, and Cumberland's *British Drama*. He has also furnished illustrations for Marryat's novels and other works of fiction. His "Christmas in the time of Elizabeth" is the best known of his historical works.

Purchased in 1877. Canvas, 24 in. x 20 in.

37 Jealous. By S. E. Waller.

Mr. Waller was born in Gloucester in 1850. He commenced his art studies at the Gloucester School of Art, joining the Royal Academy, London, in 1868. He has illustrated many books, and was for some years attached to the staff of the *Graphic*.

Purchased in 1875. Canvas, 25 in. x 19 in.

38 Grandmother's Reading Lesson. By Elinor Bell.

Miss Bell studied art at Munich, where she was a pupil of Joseph Flügen. She resided for a time in Melbourne.

Presented by the friends of Miss Bell in 1885. Canvas, 28 in. x 41 in.

39 Sea Fog blowing over Oulton Broad, Norfolk. By E. H. Fahey, R.I.

Purchased in 1892. Canvas, 30 in. x 60 in.

40 Sheep in Repose. By Edmond Tschaggeny.

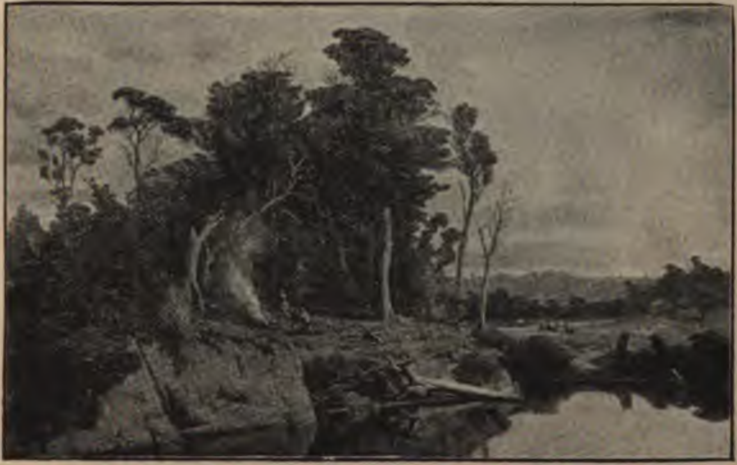
Edmond Tschaggeny was born at Brussels in 1818, and died in 1873. He painted landscapes and animals, devoting himself chiefly to the latter, for his studies of which he became well known.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 29 in. x 43 in.

41 Freshwater Bay, Isle of Wight. By Hermann Eschke.

Herr Eschke was born at Berlin in 1823. He studied under Wilhelm Krause at Berlin, and subsequently under Le Poittevin at Paris. He travelled through Europe to complete his studies, and in 1881 was appointed Professor at the Berlin Academy.

Purchased in 1881. Canvas, 27 in. x 35 in.

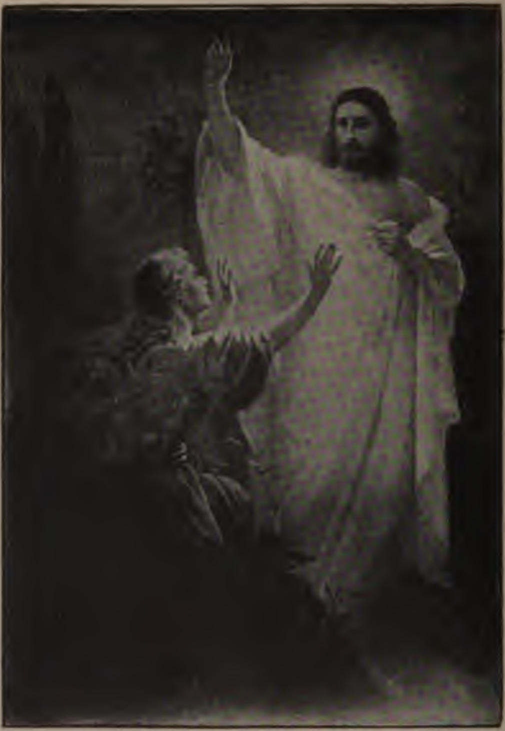


42 Winter Morning near Heidelberg. By Louis Buvelot.

Purchased in 1869. Canvas, 30 in. x 38 in.

43 Summer Morning, North Wales. By Edwin Ellis.

Presented by David Beath, Esq., in 1889. Canvas, 48 in. x 74 in.

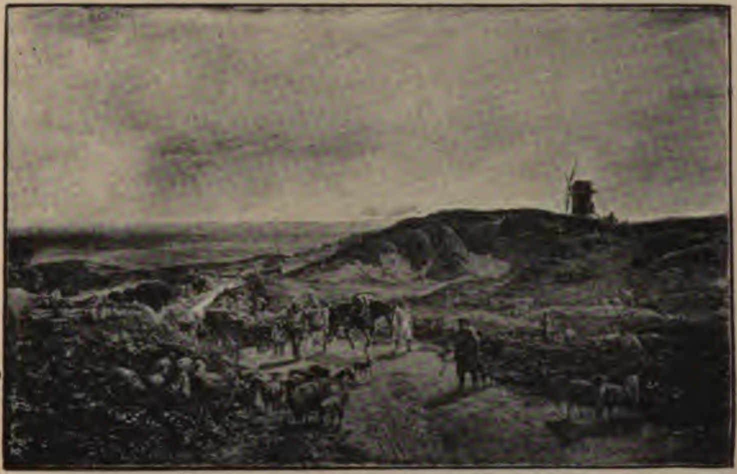


44 Noli Me Tangere. By Professor Plockhorst.

"Jesus saith to her, Touch Me not; for I am not yet ascended unto the Father: but go unto my brethren, and say unto them, I ascend unto My Father, and your Father; and My God, and your God."—John xx. 17.

Bernard Plockhorst was born at Brunswick in 1823. He studied at Munich under Piloty, and at Paris under Couture. Most of his historical pictures are religious, but his portraits are his best works. He was Professor of Painting at Weimar from 1866 to 1869. His pictures, "The Emperor William" and "The Empress Augusta," are in the Berlin National Gallery.

Purchased in 1881. Canvas, 76 in. x 51 in.

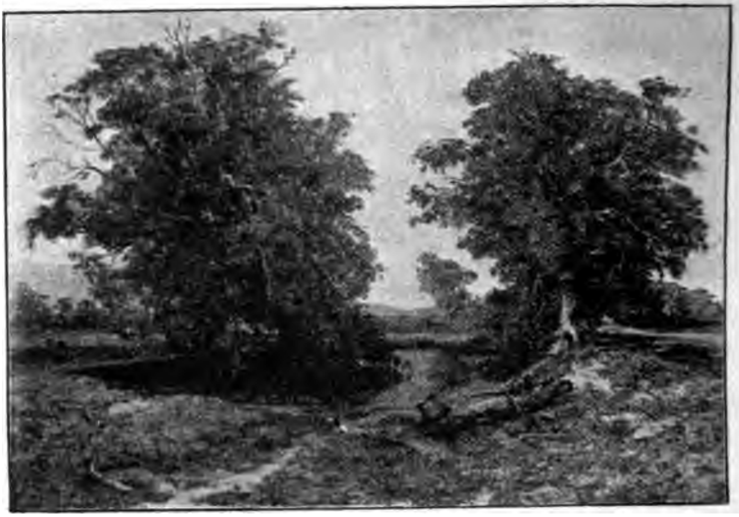


45 Weald of Kent. By Samuel Bough, R.S.A.

The Weald, which was long an immense forest, but has been gradually brought under cultivation, lies between the North and South Downs. "When viewed," says Hasted, "from the adjoining hills, which command a prospect over the whole of it, the Weald exhibits the most delightful scene that can be imagined. It appears to the eye an extensive level country (the few hills in it being so small and inferior to those whence it is viewed), covered with all the richness of both art and nature; the variety of small enclosures of corn and meadow, and the houses, seats, and villages, promiscuously interspersed among the large and towering oaks, which grow over the whole face of it, have the most pleasing effect, and represent to us, even at this time, something, though a great improvement of its original state, in the idea of an inhabited and well-cultivated forest."

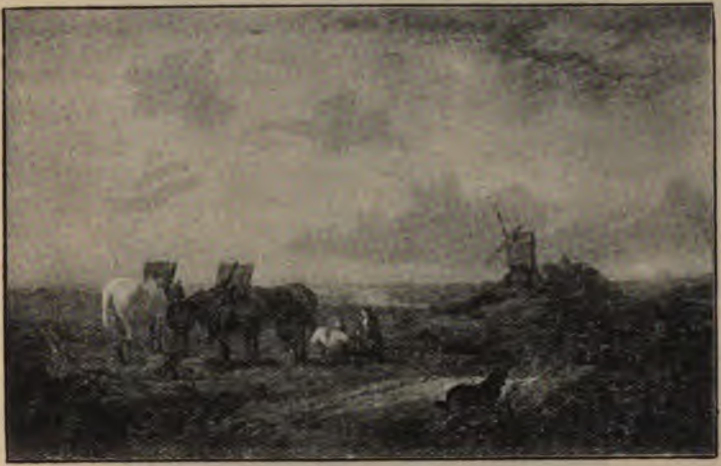
Samuel Bough was born in Cumberland in 1822, and died in 1878, having spent the last twenty years of his life at Edinburgh. He began his career as a scene painter. He was elected an R.S.A. in 1875. A collection of his works was exhibited at Glasgow in 1880, and another at Edinburgh in 1884.

Purchased in 1871. Canvas, 48 in. x 72 in.



46 Waterpool at Coleraine. By Louis Buvelot.

Purchased in 1870. Canvas, 42 in. x 60 in.

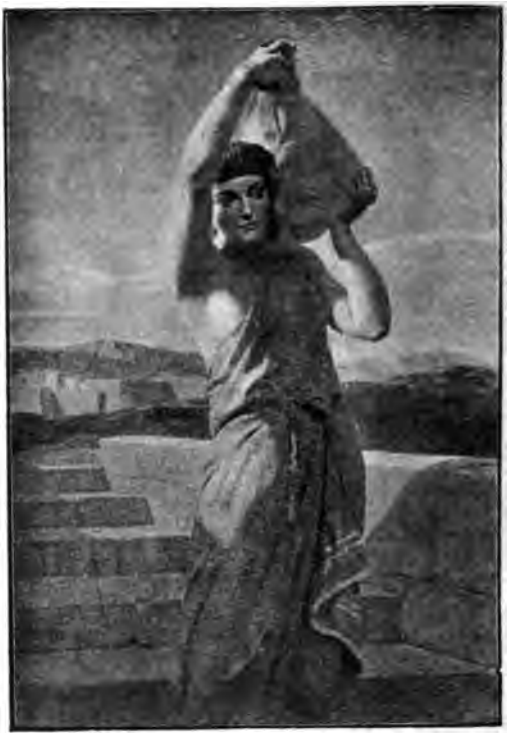


47 England. The Landscape by Thomas Creswick, R.A. The Figures and Animals by Richard Ansdell, R.A.

Thomas Creswick was born in Sheffield in 1811, and died in 1870. He studied drawing at Birmingham, and, going to London, exhibited at the Academy in 1828. He was elected an R.A. in 1857.

Richard Ansdell was born in Liverpool in 1815, where he was educated. He painted historical pictures, but is better known for his paintings of animals. Mr. Ansdell executed several pictures in conjunction with Thomas Creswick. He was elected an R.A. in 1871, and died in 1885.

Purchased in 1878. Canvas, 48 in. x 72 in.



48 Rachel Going to the Well. By Frederick Goodall, R.A.

Mr. Goodall was born in London in 1822. He was awarded the "Isis" medal of the Society of Arts when fourteen years of age, for a drawing of Lambeth Palace, and a few years later a large silver medal for his first effort in oils—"The finding of the Dead Body of a Miner by Torchlight." He first exhibited in the Royal Academy in 1839, and became an R.A. in 1864, in which year he exhibited his "Summer Song" and "The Song of the Nubian Slave." He is still a regular exhibitor at the Academy, chiefly of religious pictures. This work is a replica.

Purchased in 1867 by the Commissioners of Fine Arts for Victoria. Canvas, 60 in. x 36 in.

49 Italian Brigands. By J. Layraud.

"This picture is generally supposed to depict an actual event; and the inquiry has been made, we believe, in print, why the artist has represented the Marquis of Lorne and Princess Louise as captives to brigands, when, happily, no such fate ever befel them. The male captive certainly happens to bear a very considerable resemblance to the young Marquis, but the likeness is, of course, purely accidental. The painter chose a fair-haired northern type for the victims in his picture as affording the strongest artistic contrast to the swarthy, black-haired, villainous and brutal aspect of their captors. To give an English character to the former was, besides, not inappropriate, many of our travelling countrymen having been similarly seized and maltreated. The 'motive' of the picture originated, indeed, from the atrocious assassination of the English captives by the Greek brigands at Marathon. But, as the artist had not the opportunity to represent that horrible scene with local correctness, he has contented himself with an imaginary illustration of the brigandage which, though now fast diminishing, has long disgraced Italy, and which has furnished many a scene similar to that before us."—*Illust. London News*, 16th September, 1871.

Layraud was born of humble parents in the village of Roche-sur-le-Buis, in the department of the Drôme. He was hardly twelve years of age when he was sent into the fields as a shepherd boy. At twenty he could scarcely read; but acquiring 250 francs by the sale of game, the skins of animals, and two lambs, he betook himself to Marseilles. The young painter showed such signs of promise that the Council-General of the Drôme voted a sum of 1,500 francs, with which he proceeded to Paris to prosecute his studies under Robert Fleury and Coignet. In 1864 he obtained the Grand Prix de Rome. The "Shepherd Painter," as he is called, spent six years at the French Academy at Rome.

Purchased in 1873. Canvas, 12 ft. x 21 ft.

50 Fisherwoman. By Félix Cogen.

Mr. Cogen, who now practises his profession at Brussels as a *genre* and animal painter, obtained a medal at the Paris Exhibition in 1875.

Purchased in 1881. Canvas, 58 in. x 39 in.

51 Gulf of Salerno. By F. R. Unterberger.

The Gulf of Salerno is an inlet of the Mediterranean, separated from the Bay of Naples by Cape Campanella.

Herr Unterberger was born at Innsbruch in 1838. He studied at the Munich Academy, and subsequently at Milan, under Albert Zimmermann, and at Düsseldorf under Andreas Achenbach. He settled in Belgium in 1860, where he followed the Belgium School, devoting himself to landscape painting.

Purchased in 1875. Canvas, 45 in. x 40 in.

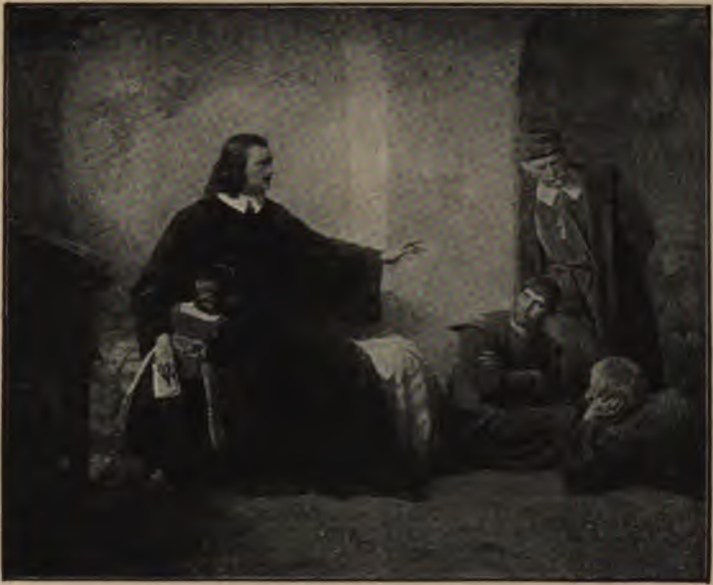
52 Chestnut Grove, Valley of the Tessin, Italy. By Professor Carl Ludwig.

Carl Ludwig was born at Römhild, Saxe-Meiningen, in 1839. He studied at the Munich Academy and under Piloty. He was for a time Professor at the Stuttgart Art School, but removed to Berlin in 1880.

Purchased at the Centennial International Exhibition, 1888. Canvas, 39 in. x 60 in.

53 Bunyan in Prison. By Geo. Frederick Folingsby.

John Bunyan, born at Elstow, near Bedford, in 1628, was indicted and committed to Bedford Gaol, 12th November, 1660, as a common "upholder of several unlawful meetings and conventicles, to the great disturbance and distraction of the good subjects of this kingdom." "He had published several theological compositions before his arrest, which have relatively little value. Those which he wrote in prison—even on theological subjects—would alone have made him a reputation as a Nonconformist divine. In no other writings are the peculiar views of Evangelical Calvinism brought



out more clearly, or with a more heart-felt conviction of their truth. They have furnished an arsenal from which English Protestant divines have ever since equipped themselves. . . . The first part of the *Pilgrim's Progress* was composed there as an amusement."—Froude's *Bunyan*.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 44 in. x 53 in.

54 The Heart of the Coolins, Isle of Skye. By Keeley Halswelle, R.I., R.S.A.

Mr. Keeley Halswelle, who was born at Richmond in 1834, died in 1891. Residing in London for some time prior to his death, he painted at Edinburgh and Rome, particularly portraying incidents of Italian peasant life. Another picture by the same artist is in this Gallery. His "Non Angli sed Angeli" is in the Art Gallery of New South Wales.

Purchased in 1888. Canvas, 44 in. x 72 in.

55 Mental Arithmetic. By T. C. Gotch.

Presented by J. S. Gotch, Esq., in 1884. Canvas, 59 in. x 48 in.

56 Welcome Shade. By Keeley Halswelle, R.I., R.S.A.

Purchased in 1888. Canvas, 43 in. x 71 in.

57 Death of George Villiers, Duke of Buckingham. By David Wilkie Wynfield.

The subject of this picture, the favourite of James I. and Charles I., was born in 1592. After completing his studies in France, he was introduced to the Court of James I., who took a liking for him immediately. He was rapidly raised to the highest offices in the State, but conducted himself with such pride and insolence as to excite popular hatred. Whilst at Portsmouth in 1628, preparing an expedition for the relief of Rochelle, he was stabbed in the heart, as he left the room in which he breakfasted, by a discontented officer who had served under him.

Mr. Wynfield, who was born in 1837, is a grand-nephew of Sir David Wilkie. Having studied for the church, he finally entered the studio of L. M. Leigh in 1856, devoting himself to historical subjects, and such as are of a tragic nature. Many of his pictures have been exhibited at the Royal Academy, amongst others "The Discovery of Gold in Australia in 1877." He died in 1887.

Purchased in 1881. Canvas, 37 in. x 60 in.

58 Dunstanborough Castle. By J. M. W. Turner, R.A.

Turner was born in 1775, at Maiden Lane, Covent Garden, where his father carried on the business of a hair-dresser. His genius for art manifested itself at an early age, two drawings by him having been at the Academy in 1787.

In 1788 he was engaged in the office of Mr. Hardwick, an architect, who, recognising his talents, recommended him to enter at the Royal Academy, where he commenced his studies in the following year. He exhibited for the first time at the Academy in 1790, his work being a water-colour drawing of Lambeth Palace, and for some years subsequently he confined himself principally to water-colours, in which he had already achieved remarkable success. He soon became engaged by various persons to make drawings which were to be engraved as illustrations to topographical and other works. In 1795 he painted his first oil picture—a view on the Thames above Battersea, or, according to some, a view of Rochester Castle. The first oil painting exhibited by him at the Royal Academy was "Moonlight, a Study at Millbank," which is now in the National Gallery, London. In 1799 appeared "The Battle of the Nile," and in the following year "The Fifth Plague of Egypt." Turner's extraordinary talent was now recognised by his election as an R.A. in 1802. In 1807 was commenced the publication of his beautiful and highly artistic work the *Liber Studiorum*, in rivalry of the

Liber Veritatis of Claude. Turner died in 1851, bequeathing his pictures to the nation. Over one hundred of his paintings, and as many of his sketches and drawings, are in the National Gallery, London. He is regarded as the greatest landscape painter that ever lived, and his works now command fabulous prices. The first picture by him that has found a home in Australia is "Dunstanborough Castle."

Presented by the Duke of Westminster in 1888. Canvas, 47 in. x 35 in.

59 La Dernière Etape de Coco. By Pierre Beyle.

Pierre Beyle, a *genre* painter, was born at Lyons in 1838. Originally a house painter, with the help of the designer Philippon he was enabled to send his first picture to the Salon of 1867.

Purchased in 1881. Canvas, 36 in. x 46 in.

60 A Norwegian Fjord. By T. Duntze.

Purchased in 1875. Canvas, 34 in. x 55 in.

61 Original Sketch of the Indian Shepherd. By Nicholas Chevalier.

Presented by Saul Joshua, Esq., in 1891. Canvas, 19 in. x 29 in.

62 In the Fields. By Benjamin Williams Leader, A.R.A.

Benjamin Williams Leader was born at Worcester in 1831. He entered the Royal Academy in 1854, exhibiting there in the same year his first picture, "Cottage Children Blowing Bubbles." He was elected an A.R.A. in 1883.

Purchased in 1873. Canvas, 27 in. x 41 in.

63 The Morning after Trafalgar. By William Clarkson Stanfield, R.A.

William Clarkson Stanfield, of Irish parentage, was born at Sunderland, and commenced life as a sailor. An accident disabling him for active service, he was engaged to

paint the scenes for Douglas Jerrold's theatrical entertainments. In 1818 he was appointed scene painter at the old "Royalty," and subsequently at the "Cobourg," in Lambeth, and at "Drury Lane." He soon, however, began to exhibit pictures, and from his election as R.A. in 1835 to his death was a regular exhibitor at the Academy. His "Venice, the Canal of the Giudecca," "Entrance to the Zuyder Zee," "The Lake of Como," and "The Battle of Trafalgar" are in the National Gallery, London. "He is the leader of the English realists, and, perhaps, amongst the most remarkable of his characteristics is the look of common sense and rationality which his compositions will always bear when opposed to any kind of affectation."—Ruskin's *Modern Painters.*

Purchased at the Centennial Exhibition, 1888. Canvas, 25 in. x 42 in.

64 A Mill Race. By C. J. Lewis, R.I.

C. J. Lewis, who died in 1892, was a painter of domestic interiors and rural subjects. He was a constant exhibitor at the Royal Academy for many years.

Purchased in 18[illegible] x 39 in.

*65 Ferry on the River Ninfa. By Penry Williams.

"The scene lies in the Pontine Marshes; the flat-bottomed, strangely-shaped ferry-boat is deeply laden with a group of peasants returning from their day's labour, probably to the little village of Sarmoneta in the distance. It is a cleverly painted picture with a fine atmospheric effect."—*Art Journal*, 1864.

Penry Williams was born in Wales in 1798. In 1827 he settled at Rome, where he resided until his death in 1885, frequently exhibiting, however, in England Italian landscapes and studies of Italian peasants. His "Italian Girl with a Tambourine," "Italian Peasants Resting by a Roadside," and "Neapolitan Peasants Resting at a Fountain" are in the National Gallery, London.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 33 in. x 48 in.

*66 Memories of the First Palm Sunday. By Edith Courtauld.

"Palms strewn in joy are gathered now in tears."

Miss Courtauld paints landscapes. She first exhibited at Braintree in 1864, and since that year several of her works were at the Royal Academy.

Purchased in 1872. Canvas, 32 in. x 63 in.

*67 Autumn on the Hudson, North America. By W. L. Sonntag.

William Louis Sonntag was born in Pennsylvania in 1822. His professional life was spent in Cincinnati, Italy, and New York where he has resided for many years. He is entirely a self-taught artist.

Presented by John R. Ricards, Esq., in 1867. Canvas, 36 in. x 56 in.

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* At present on loan to the Ballarat Fine Art Public Gallery Association.

*68 Upper Morelaggan, Loch Long. By Waller H. Paton, R.S.A.

Purchased in 1882. Canvas, 36 in. x 54 in.

*69 The Land's End. By H. Koekkoek.

Presented by the Artist in 1888. Canvas, 22 in. x 43 in.

*70 On the Ice, Stockholm. By P. W. Cedergren.

Presented by J. P. Cederberg, Esq., in 1861. Canvas, 24 in. x 36 in.

†71 Rose of England. By Charles Baxter.

Charles Baxter was born at London in 1809. At an early age he was apprenticed to a bookbinder, but soon abandoned this calling to commence a struggling career as a painter of portraits and miniatures. He first exhibited in the Royal Academy in 1834, and was a regular contributor for many years. Though starting in life as a portrait painter, Baxter's reputation chiefly rests upon his works illustrative of poetical and rustic subjects. He died in 1879.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 21 in. x 17 in.

†72 Rosebud of England. By Charles Baxter.

Purchased in 1864 by the Commissioners of Fine Arts for Victoria. Canvas, 21 in. x 17 in.

†73 Italian Peasants. By Giovanni Innocenti.

Giovanni Innocenti exhibited at the Suffolk Street Exhibition in 1871.

Purchased in 1870. Canvas, 29 in. x 39 in.

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* At present on loan to the Ballarat Fine Art Public Gallery Association.
† At present on loan to the Bendigo Art Gallery.

*74 Adam and Eve finding Abel. By N. Carta.

N. Carta was Professor of Painting at the Academy of St. Luke, Rome.

Purchased in 1870. Canvas, 44 in. x 52 in.

*75 Child Playing at Grandmother. By Kate Gray.

Miss Gray first exhibited at Woodford in 1873, a picture of hers subsequently appearing at the Royal Academy.

Purchased in 1872. Canvas, 14 in. x 12 in.

*76 Travelling Tinker. By E. Opie.

Edward Opie first exhibited at St. Agnes, Cornwall, in 1839. He devoted his attention to domestic subjects, no less than forty of his pictures having appeared at the Royal Academy.

Purchased in 1873. Canvas, 31 in. x 24 in.

*77 Bamborough Castle, Northumberland. By Alfred William Hunt, R.W.S.

"Thy tower, proud Bamborough, mark'd they there,
King Ida's castle huge and square,
From its tall rock look grimly down,
And on the swelling ocean frown."

Scott's *Marmion.*

Alfred William Hunt was born at Liverpool in 1831. He graduated at Oxford, and did not turn his attention to art as a profession until he was twenty-five years of age. He received his art education from his father, a landscape painter, and was a frequent contributor to the exhibitions of the Society of Painters in Water-Colours and the Royal

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* At present on loan to the Bendigo Art Gallery.

Academy. "Mr. Hunt is among the few of our landscape painters who have gained a new mastery over the realities of landscape without sacrificing the poetical qualities of noble art."—*Art Journal*, August, 1874.

Purchased in 1873. Canvas, 55 in. x 30 in.

*78 Death and the Fortune Teller. Attributed to Cornelius Bega.

Bega was born at Harlem in 1620. He was a pupil of Adrian Ostade, and his pictures, like those of his master, represent Dutch peasants regaling themselves, and the interior of Dutch cottages.

Purchased in 1874. Panel under glass, 15 in. x 14 in.

*79 Balmoral. By Joseph Adam.

Mr. Adam is a landscape painter who has exhibited many works at the Royal Academy.

Purchased in 1878. Canvas, 72 in. x 48 in.

*80 Ben Venue and Loch Vennachar, in the Highlands of Scotland. By David Law, R.P.E.

"Islands, that, empurpled bright,
Floated amid the livelier light,
And mountains, that like giants stand,
To sentinel enchanted land.
High on the south, huge Ben Venue
Down on the lake in masses threw
Crags, knolls, and mounds, confusedly hurl'd,
The fragments of an earlier world."

Scott's *Lady of the Lake*, I. xiv.

Purchased in 1881. Canvas, 28 in. x 49 in.

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* At present on loan to the Bendigo Art Gallery.

V.—THE BUVELOT GALLERY.

FIRST BAY.

PORTRAITS OF COLONIAL GOVERNORS, &c.

1 Charles Joseph La Trobe, C.B.

2 John Vesey Fitzgerald Leslie Foster.

3 Captain Sir Charles Hotham, K.C.B.

4 Lieut.-General Sir Edward Macarthur, K.C.B.

5 Sir Henry Barkly, G.C.M.G., K.C.B.

6 Sir Charles Henry Darling, K.C.B.

7 Brigadier-General George Jackson Carey, C.B.

8 The Right Hon. John Henry Thomas Manners-Sutton, Third Viscount Canterbury, G.C.M.G., K.C.B.

9 Sir William Foster Stawell, K.C.M.G.

10 The Right Hon. Sir George Ferguson Bowen, P.C., G.C.M.G.

11 The Right Hon. George Augustus Constantine Phipps, Marquis of Normanby, P.C., G.C.B., G.C.M.G.

12 Sir Henry Brougham Loch, G.C.B., G.C.M.G.

13 Sir Henry Brougham Loch, G.C.B., G.C.M.G.

14 Lady Loch.

15 Sir William Cleaver Francis Robinson, G.C.M.G.

16 Captain John Hunter, R.N.

17 Captain Philip Gidley King, R.N.

18 Admiral William Bligh.

19 Colonel George Johnstone.

20 Major-General Lachlan Macquarie.

21 Major-General Sir Thomas Makdougall-Brisbane Bart., G.C.B.

22 Colonel William Stewart.

23 General Sir Ralph Darling, G.C.H.

24 Major-General Sir Richard Bourke, K.C.B.

25 Colonel Kenneth Snodgrass, C.B.

26 Sir George Gipps.

27 Sir Charles Augustus Fitzroy, K.C.B., K.H.

28 Sir Charles Augustus Fitzroy, K.C.B., K.H.

29 Lieut.-General Sir William Thomas Denison, K.C.B.

30 The Right Hon. Sir John Young, First Baron Lisgar, P.C., G.C.B., G.C.M.G.

31 Major-General Sir Trevor Chute, K.C.B.

32 The Right Hon. Somerset Richard Lowry Corry, Fourth Earl of Belmore, P.C., K.C.M.G.

33 Sir Alfred Stephen, G.C.M.G., C.B.

34 The Right Hon. Sir Hercules George Robert Robinson, P.C., G.C.M.G.

35 The Right Hon. Charles Robert Carington Baron Carrington, P.C., G.C.M.G.

36 Lady Carrington.

37 The Right Hon. Sir George Ferguson Bowen, P.C., G.C.M.G.

38 Sir Maurice Charles O'Connell.

39 The Right Hon. George Augustus Constantine Phipps, Marquis of Normanby, P.C., G.C.M.G.

40 Colonel Sir Andrew Clarke, K.H.

41 Sir Frederick Aloysius Weld, G.C.M.G.

42 Rear-Admiral Sir John Hindmarsh, K.H.

43 George Milner Stephen.

44 Colonel George Gawler, K.H.

45 Sir George Grey, K.C.B.

46 Lieutenant-Colonel Frederick Holt Robe, C.B.

47 Sir Henry Edward Fox Young, C.B.

48 The Hon. Boyle Travers Finniss.

49 Sir Richard Graves MacDonnell, K.C.M.G., C.B.

50 Sir Dominick Daly.

51 Sir Dominick Daly.

52 The Right Hon. Sir James Fergusson, Bart., P.C., G.C.S.I., K.C.M.G.

53 Sir Richard Davies Hanson.

54 Sir Anthony Musgrave, G.C.M.G.

55 Lieut.-General Sir William Francis Drummond Jervois, G.C.M.G., C.B.

56 Mr. Justice Boucaut.

57 Sir John Franklin, K.C.H.

58 Lieut.-General Sir William Thomas Denison, K.C.B.

59 Sir Thomas Gore Browne, K.C.M.G., C.B.

60 Sir Charles Du Cane, K.C.M.G.

61 Sir William Lambert Dobson.

62 Sir George Grey, K.C.B.

63 Sir George Alfred Arney.

64 The Right Hon. Sir Hercules George Robert Robinson, P.C., G.C.M.G.

65 Major-General Sir Peter Scratchley, K.C.M.G.

66 Major-General Francis Gilbert Hamley.

PORTRAITS, ETC.

67 Louise d'Orléans, reine des Belges.
Lithographed by Charles Billoin.

68 Napoleon Buonaparte.
A crayon portrait.
Purchased in 1875. Size, 24 in. x 19 in.

69 Napoleon III.
Engraved by Samuel Cousins after a painting by F. Winterhalter.
Presented by His Imperial Majesty.

70 Léopold Premier, roi des Belges.
Lithographed by Baugniet.
Presented by His Majesty.

71 H.M. William I., King of Prussia.
Lithographed by E. Milster.
Presented by the Prussian Government.

72 S.M. Léopold I^{er} roi des Belges.
Lithographed by Simonau and Toovey after a drawing by G. L. Ghémar.
Presented by His Majesty.

73 S.M. Marie-Henriette, reine des Belges.
Lithographed after a drawing by Louis Ghémar.

74 H.R.H. Frederick William, Crown Prince of Prussia.
Lithographed by P. Rohrbach after a painting by T. Hellwig.
Presented by the Prussian Government.

75 H.R.H. The Duke of Edinburgh.
Engraved by William Holl after a painting by A. de Salomé.

76 S.M. Léopold II., roi des Belges.
Lithographed after a drawing by Louis Ghémar.

77 H.R.H. Victoria Adelaide Maria Louisa, Princess Royal of England and Crown Princess of Prussia.
Lithographed by J. Feckert after a painting by F. Winterhalter.
Presented by the Prussian Government.

78 Willem de Derde, Koning der Nederlanden, Groot Hertog van Luxemburg.
Engraved by J. W. Kaiser after a painting by N. Pieneman.
Presented by His Majesty.

79 H.R.H. The Duke of Penthievre.
A photograph.
Presented by H.R.H.

80 Her Majesty Queen Victoria.
A photograph.
Presented by Mr. H. B. Lane in 1887.

81 H.R.H. The Prince of Wales.
A crayon drawing by William Dyce, R.A.
Presented by Duncan Elphinstone Cooper, Esq., in 1877. Size, 19 in. x 15 in.

82 S.A.R. le Comte de Flandre.
Engraved by J. Franck after a painting by L. De Winne.

83 S.A.I. et R. la Princesse Charlotte, impératrice du Mexique.

Engraved by J. Franck from a drawing by E. Devaux.

84 Saint George and the Dragon.

A bronze Group.
Presented by A. Mollison, Esq.

SECOND BAY

1 Circe and the Friends of Ulysses.

Engraved by F. Stacpoole after a painting by Briton Rivière, R.A.
Presented by William Agnew, Esq., in 1876.

2 L'Aveugle.

Engraved by J. B. Michiels after a painting by Joseph Laurens Dyckmans.
Presented by the Belgian Government.

3 Le Mont de Piété.

Etched by Ch. Koepping after a painting by M. de Munkacsy.
Presented by H. Koekkoek, Esq., in 1889.

4 Death of Nelson at the Battle of Trafalgar.

Engraved by Charles W. Sharpe after a painting by Daniel Maclise, R.A.
Presented by W. Pummeroy, Esq., in 1878.

5 Worship of Bacchus.

Engraved by Charles Mottram after a painting by George Cruikshank.

6 All that was Left of the "Homeward Bound."

Engraved by F. Stacpoole after the painting by Briton Rivière, R.A.
Presented by William Agnew, Esq., in 1876.

7 Allied Generals and their Staff Officers before Sebastopol. With Key.

Engraved by Charles G. Lewis after a painting by Thomas J. Barker.
Presented by Henry Sewell, Esq.

8 Pursuit of Pleasure.

Engraved by Henry Thomas Ryall after a painting by Sir Noel Paton.

Presented by Thomas Russell, Esq.

9 Noah's Sacrifice.

Engraved by W. H. Simmons after a painting by Daniel Maclise, R.A.

10 Wellington and Blücher Meeting after the Battle of Waterloo.

Engraved by Lumb Stocks, R.A. after a painting by Daniel Maclise, R.A.

Presented by W. Pummeroy in 1878.

11 Christian Martyrs.

Engraved by N. Bourne after a painting by Gustave Doré.

Presented by the Hon. W. A. Brodribb in 1876.

12 An Egyptian Feast.

Engraved by Edouard Girardet after a painting by Edwin Long, R.A.

Purchased in 1883.

13 Daniel in the Lions' Den.

Engraved by Charles G. Lewis after a painting by Briton Rivière, R.A.

Presented by William Agnew, Esq., in 1876.

14 Charity.

Engraved by F. Stacpoole after a painting by Briton Rivière, R.A.

Presented by William Agnew, Esq., in 1876.

15 Surrender of Calais.

Engraved by H. Robinson after a painting by H. C. Selous.

Presented by the Hon. John Pascoe Fawkner in 1868.

16 Frédégonde et Prétextat.

Lithographed by F. van Loo from a painting by L. Alma Tadema, R.A.

Presented by the Belgian Government.

17 Study of Male Figure.

A chalk drawing by Padouanino.

Presented by Eliezer L Montefiore, Esq., in 1869. Size, 15 in. x 10 in.

18 Study of Male Figure representing St. Luke.

A pen and wash drawing by Bernardo Castelli.

Presented by Eliezer L. Montefiore, Esq., in 1869. Size, 12 in. x 7 in.

19 Study of Figures.

Drawn in red chalk by Bartolozzi.

Presented by Eliezer L. Montefiore, Esq., in 1869. Size, 12 in. x 9 in.

20 Elizabeth Thompson (Lady Butler).

A pencil drawing by Leslie Ward.

Purchased in 1881. Size, 18 in. x 14 in.

21 The Hon. David Hume.

A mezzotint by C. Turner after a painting by Sir Henry Raeburn, R.A.

22 William Blake.

Engraved by L. Schiavonetti after a painting by Thomas Phillips, R.A.

23 The Hon. Alexander Abercromby.

A mezzotint by George Dawe, R.A.

24 Cupid and Three Graces.

A pen and wash drawing by Angelica Kauffmann.

Presented by Eliezer L. Montefiore, Esq., in 1869. Size, 5 in. x 8 in.

25 Peter and John at the Beautiful Gate of the Temple.

A photograph from the original cartoon by Raphael.

26 Satan Mustering his Hosts.

Engraved by James Barry, R.A. after a painting by himself.

Presented by the Society for the Encouragement of Arts, London, in 1881.

27 Garrick between Tragedy and Comedy.

A mezzotint by Charles Corbutt after a painting by Sir Joshua Reynolds.

Presented by J. L. Grundy, Esq.

28 Madonna and Child.

A mezzotint by John Raphael Smith after a painting by Sir Joshua Reynolds.

Presented by J. L. Grundy, Esq.

29 William Pitt.

A mezzotint by H. S. Goed after a painting by William Owen, R.A.

30 Descent from the Cross.

A steel engraving after a painting by Rubens. Original in the Cathedral at Antwerp.
Presented by the Belgian Government.

31 Christ's Charge to St. Peter.

A photograph from the original cartoon by Raphael.

32 The Right Hon. Sir Robert Peel.

Engraved by John Linnell after a picture by himself.
Presented by J. L. Grundy, Esq.

33 Study of Male Figure.

A drawing in red chalk by Pieter van Laer, called Bamboccio.
Presented by Eliezer L. Montefiore, Esq., in 1869. Size, 11 in. x 12 in.

34 Italian Landscape.

Engraved by J. T. Willmore, A.R.A. after a painting by J. M. W. Turner, R.A.
Presented by the Hon. John Pascoe Fawkner in 1868.

35 Veduta del Castello dell'Acqua Felice.

Engraved by Giovanni Battista Piranesi.

36 The Oban Boat.

A drawing in black and white by J. E. Hodgson, R.A.
Purchased in 1891. Size, 11 in. x 17 in.

37 Sir Frederick Leighton.

A pencil drawing by Leslie Ward.
Purchased in 1881. Size, 13 in. x 10 in.

38 The Tribute Money.

Engraved by Stephen Baudet after a painting by Valentin.
Presented by George Collins Levey, Esq., in 1879.

39 The Infant Jesus Sleeping in His Mother's Arms.

Engraved by Stephen Picart after a painting by Annibal Carracci.
Presented by George Collins Levey, Esq., in 1879.

40 The Zulu War, 1878.

A drawing in black and white by C. E. Fripp.
Presented by the proprietors of *The Graphic* in 1881.
Size, 21 in. x 31 in.

41 Concert de Musique.

Engraved by Stephen Picart after a painting by Domenichino.
Presented by George Collins Levey, Esq., in 1879.

42 The Visitation.

Engraved by Henry Goltz.
Presented by George Collins Levey, Esq., in 1879.

43 The Sacrifice at Lystra.

A photograph from the original cartoon by Raphael.

44 Christ with the Disciples at Emmaus.

Engraved by Anthony Masson after a painting by Titian.
Presented by George Collins Levey, Esq., in 1879.

45 Rubens.

Engraved by William Woollett after a picture by Vandyck.

46 Æneas Bearing his Father Anchises from Burning Troy.

Engraved by Agostino Carracci after a painting by Federigo Barocci.
Presented by George Collins Levey, Esq., in 1879.

47 Entombment of Christ.

Engraved by Giles Rousselet after a painting by Titian.

48 St. Paul Preaching at Athens.

A photograph from the original cartoon by Raphael.

49 St. Peter in Prison.

Engraved by Joannes Volpato after a fresco by Raphael.
Presented by W. Jaffray, Esq.

50 The Martyrdom of St. Stephen.

Engraved by Lud. Gruner after a lost cartoon by Raphael.

51 La Cena (The Last Supper).

Engraved by Raphael Morghen after a fresco by Leonardo da Vinci.

52 Last Judgment.

Engraved by Ant. Lafrery after a fresco by Michel Angelo.

53 School of Athens.

Engraved by Joannes Volpato after a fresco by Raphael.
Presented by W. Jaffray, Esq.

54 Conversion of Saul.

Engraved by Ludwig Gruner after a lost cartoon by Raphael.

55 Elymas the Sorcerer struck with Blindness.

A photograph from the original cartoon by Raphael.

56 Adoration of the Magi.

Engraved by H. Goltz.
Presented by George Collins Levey, Esq., in 1879.

57 Plague among the Philistines. Dagon destroyed.

Engraved by Stephen Picart after a painting by Nic. Poussin.
Presented by George Collins Levey, Esq., in 1879.

58 Miracle of Manna.

Engraved by G. Chasteau after a painting by Nic. Poussin.
Presented by George Collins Levey, Esq., in 1879.

59 Martyrdom of St. Stephen.

Engraved by G. Chasteau after a painting by Annibal Carracci.
Presented by George Collins Levey, Esq., in 1879.

60 Death of Ananias.

A photograph from the original cartoon by Raphael.

61 Rebecca at the Well.

Engraved by Giles Rousselet after a painting by N. Poussin.
Presented by George Collins Levey, Esq., in 1879.

62 Martyrdom of St. Stephen.

Engraved by Stephen Baudet after a painting by Annibal Carracci.
Presented by George Collins Levey, Esq., in 1879.

63 The Deluge.

Engraved by John Edelinck after a painting by Alessandro Veronese.
Presented by George Collins Levey, Esq., in 1879.

64 Collection of Autotype Reproductions of Drawings by Old Masters.

THIRD BAY.

1 The Goldfields of Victoria during 1852-1853. Fifty original sketches. By S. T. Gill.

Purchased in 1891.

2 Overlanders. By S. T. Gill.

A water-colour drawing.
Purchased in 1872. Size, 9 in. x 7 in.

3 Stockmen (Noon). By S. T. Gill.

A water-colour drawing.
Purchased in 1872. Size, 14 in. x 6 in.

4 View from Retreat Villa, St. Kilda, 1862. By George O'Brien.

A water-colour drawing.
Purchased in 1886. Size, 11 in. x 17 in.

5 Melbourne from the Botanic Gardens in 1867. By H. C. Gritten.

An oil painting.
Purchased in 1891. Canvas, 11 in. x 17 in.

6 Melbourne from the Domain in 1871. By H. Burns.

An oil painting.
Purchased in 1891. Canvas, 15 in. x 25 in.

7 View from the Junction of Barkly and Prince's Streets, St. Kilda, 1862. By George O'Brien.

A water-colour drawing.
Purchased in 1886. Size, 11 in. x 17 in.

8 Australian Section, London International Exhibition, 1862. By J. Nash.
A water-colour drawing.
Presented by Captain F. S. de Carteret Bisson in 1881.
Size, 18 in. x 21 in.

9 Stockmen (Morning). By S. T. Gill.
A water-colour drawing.
Purchased in 1872. Size, 14 in. x 6 in.

10 Bushrangers' Camp. By S. T. Gill.
A water-colour drawing.
Purchased in 1872. Size, 9 in. x 7 in.

11 Bushrangers' Camp. By S. T. Gill.
A water-colour drawing.
Purchased in 1872. Size, 9 in. x 7 in.

12 Troopers after Bushrangers. By S. T. Gill.
A water-colour drawing.
Purchased in 1872. Size, 10 in. x 7 in.

13 Bushranger Shot. By S. T. Gill.
A water-colour drawing.
Purchased in 1872. Size, 10 in. x 7 in.

14 Near Geelong in 1867. By S. T. Gill.
A water-colour drawing.
Purchased in 1872. Size, 10 in. x 6 in.

15 Sydney Cove from Fort Phillip.
An engraving.
Purchased in 1891.

16 Sydney Cove from the Stream.
An engraving.
Purchased in 1891.

17 Wooloomooloo from Domain Road.
An engraving.
Purchased in 1891.

18 Billy Blue's Cottage and the Harbour.
An engraving.
Purchased in 1891.

19 Sydney, N.S.W., with the Entrance into Port Jackson, 1800.
An Engraving

20 Hobart Town, 1821.

Engraved by H. Adlard after a drawing by G. W. Evans.

21 Portland Bay from the Heads. By S. T. Gill.

A water-colour drawing.
Purchased in 1872. Size, 8 in. x 5 in.

22 Source of the Wannon.

A chromo-lithograph after a painting by Eugene von Guerard.
Acquired in 1868.

23 View of the Golden Point, Ballarat.

Drawn on stone by William Strutt.
Lithographed by Campbell and Macartney.

24 Fall of the First Creek, near Glen Osmond, S.A.

Chromo-lithographed by Hamel and Ferguson after a painting by Eugene von Guerard.
Acquired in 1868.

25 View of the Country and of the Temporary Erections near the Site for the Proposed Town of Adelaide, S.A.

Coloured print after Lionel W. Light.

26 View of Sydney Cove, New South Wales, 1804.

Engraved by F. Jukes after E. Dayes.
Presented by John Lee, Esq.

27 View in British Guiana, South America.

A water-colour sketch.
Presented by William Webster Hoare, Esq., in 1873. Size, 11 in. x 15 in.

28 New Zealand War Canoe.

A pen and wash drawing by J. Webber.
Presented by the Hon. C. J. Ham, M.L.C., in 1882. Size, 15 in. x 21 in.

29 Native of Otaheite.

A crayon portrait by J. Webber.
Presented by the Hon. C. J. Ham, M.L.C., in 1882. Size, 25 in. x 18 in.

30 Death of Captain Cook.

An engraving by Bartolozzi and Byrne after the painting by J. Webber.
Presented by the Hon. C. J. Ham, M.L.C., in 1882.

31 Interior of a Native Village or "Pa" in New Zealand.

Chromo-lithographed by E. Walker from a painting by J. A. Gilfillan.

32 View in British Guiana, South America.

A water-colour sketch.
Presented by William Webster Hoare, Esq., in 1873.
Size, 11 in. x 15 in.

33 View in Dusky Bay, New Zealand.

A wash drawing by J. Webber.
Presented by the Hon. C. J. Ham, M.L.C., in 1882.
Size, 15 in. x 21 in.

34 Native of Mallicolo.

A crayon portrait by J. Webber.
Presented by the Hon. C. J. Ham, M.L.C., in 1882.
Size, 25 in. x 19 in.

35 View in British Guiana, South America.

A water-colour sketch for frontispiece.
Presented by William Webster Hoare, Esq., in 1873.
Size, 16 in. x 13 in.

36 Monument erected to Captain Cook in Sydney.

A photograph presented by Captain Thomas Watson in 1878.

37 Vessel "Brotherly Love," in which Captain Cook Served his Apprenticeship.

A photograph presented by Captain Thomas Watson in 1878.

38 H.M.S. "Discovery," which accompanied Captain Cook on his Last Voyage.

A photograph presented by Mr. Mainwaring in 1880.

39 Sydney Harbour. By Capt. Hunter.

A water-colour drawing.

40 View in British Guiana, South America.

A water-colour.
Presented by William Webster Hoare, Esq., in 1873.
Size, 11 in. x 16 in.

41 Opening of the First Victorian Parliament, Melbourne, 1856.

A pencil sketch by William Strutt.
Presented by the Hon. John Pascoe Fawkner in 1868.
Size 12 in. x 17 in.

42 View in British Guiana, South America.

A water-colour.
Presented by William Webster Hoare, Esq., in 1873. Size, 11 in. x 16 in.

43 Grant Street, Ballarat, from Lydiard Street, looking East, 1856.

A pencil drawing.
Purchased in 1889. Size, 4 in. x 2 in.

44 Houses of Parliament, Melbourne—Legislative Council Hall, 1856.

Lithographed by Cyrus Mason from a drawing on stone by N. Chevalier.

45 Ballarat from Golden Point—Black Hill in distance. 1856.

A pencil sketch.
Presented by J. F. Bailey, Esq., in 1883. Size, 3 in. x 4 in.

46 Great Bourke Street, Melbourne.

Drawn and engraved by R. Ransome.
Purchased in 1891.

47 Opening of the First Legislative Council of Victoria, Nov. 13th, 1851, by the Lieutenant-Governor, Charles Joseph La Trobe. With key.

Photographed from a sketch by William Strutt.
Purchased in 1891.

48 View from the Flagstaff Hill, 1853.

A pencil drawing.
Presented by James Scurry, Esq., in 1884. Size, 4 in. x 27 in.

49 Cole's Wharf from the South Side of the Yarra, 1853.

A pencil drawing.
Presented by James Scurry, Esq., in 1884. Size, 4 in. x 19 in.

50 Police Station, Richmond Paddock, 1854. By George Strafford.

A water-colour drawing.
Purchased in 1888. Size, 9 in. x 14 in.

51 Panoramic View of Melbourne, 1866.

Lithographed by De Gruchy and Leigh.

52 Sandridge Pier, 1853.

A pencil drawing.

Presented by James Scurry, Esq., in 1884. Size, 3 in. x 10 in.

53 View on the Yarra, 1853.

A pencil drawing.

Presented by James Scurry, Esq., in 1884. Size, 4 in. x 10 in.

54 Grand-view Park, Pascovale, 1839.

A pencil and wash drawing.

Presented by the Hon. John Pascoe Fawkner in 1868. Size, 8 in. x 13 in.

55 The "Lady Nelson." By G. Gregory.

An oil painting.

The colonial brig, "Lady Nelson," 60 tons, built on the Thames, commanded by Lieut. James Grant, R.N., left England 13th January, 1800. Commanded by Acting-Lieut. John Murray, discovered and entered Port Phillip Heads, 15th February, 1802.

Presented by Commodore Wilson in 1880. Canvas, 14 in. x 21 in.

56 Melbourne, Port Phillip — Surveyor-General's Yard, 1840. By Robert Hoddle.

A water-colour drawing.

Purchased in 1893. Size, 7 in. x 12 in.

57 Melbourne from the South Side of the River Yarra.

Engraved by Carmichael from a drawing by J. Adamson.

58 View taken from the Corner of Collins and Swanston Streets, Melbourne.

A pencil sketch.

Presented by the Hon. John Pascoe Fawkner in 1868. Size, 10 in. x 20 in.

59 Melbourne, Port Phillip, 1840. By Robert Hoddle.

A water-colour drawing.

Purchased in 1893. Size, 7 in. x 12 in.

60 Coloured Photograph of Count Paul Strzelecki.

Purchased in 1875.

61 Hobson's Bay from Melbourne. 1854. From the Signal Staff.

A water-colour drawing.
Purchased in 1891. Size, 7 in. x 10 in.

62 Melbourne from the Westward of Collins Street in 1840. By George O'Brien.

A water-colour drawing.
Presented by the Hon. John Pascoe Fawkner in 1868.

63 Melbourne from the South Side of the River Yarra in 1839.

A reprint of an engraving by J. Carmichael from a drawing by J. Adamson.
Purchased in 1891.

64 Melbourne in 1856.

Engraved by De Gruchy and Leigh from a drawing by George Strafford.

65 Arrival of the First Gold Escort, Melbourne, June, 1852. By William Austin.

A water-colour drawing.
Purchased in 1884.

66 Coloured Photograph of the Hon. John Pascoe Fawkner.

67 Melbourne from the Flagstaff Hill, 1853. With Key. By Andrew Robertson.

A water-colour drawing.
Presented by the Artist in 1880

68 Melbourne from the Old Falls, 1837.

Purchased in 1891.

69 Residence of Captain Lonsdale, Melbourne.

A water-colour drawing.
Presented by the Hon. John Pascoe Fawkner in 1868. Size, 8 in. x 11 in.

70 Captain Matthew Flinders, R.N.

A coloured photograph.
Purchased in 1876.

71 Melbourne in 1839.

A pencil sketch by George O'Brien.
Presented by the Hon. John Pascoe Fawkner in 1868.
Size, 10 in. x 21 in.

72 Early Melbourne, from the South.

A pencil sketch.
Purchased in 1889. Size, 4 in. x 5 in.

73 Balbirnie's Bridge over the Yarra Yarra River in 1850.

A pen and wash drawing.
Purchased in 1891. Size, 4 in. x 7 in.

74 Melbourne from the Survey Office Paddock, Collins Street West, in 1840. By Robert Hoddle.

A water-colour drawing.
Purchased in 1893. Size, 7 in. x 12 in.

75 Swanston Street, Melbourne, in 1854. By George Strafford.

A water-colour drawing.
Purchased in 1888. Size, 9 in. x 14 in.

76 Melbourne from the Falls, 1837.

Etched and presented by Eliezer L. Montefiore, Esq.
Size, 5 in. x 7 in.

77 Racecourse and Survey Office, 1840. By Robert Hoddle.

A water-colour drawing.
Purchased in 1893. Size, 7 in. x 12 in.

78 First House Built in Melbourne by J. P. Fawkner, 1836.

Photographed by J. P. Fawkner from a picture by W. F. Evelyn Liardet.
Presented by James Dawson, Esq., in 1886.

79 Monument erected in the Camperdown Cemetery in Memory of the extinct Aborigines of that District.

A photograph.
Presented by James Dawson, Esq., in 1886.

80 Batman's Hill and House erected in 1836.

Photographed from a picture by W. F. Evelyn Liardet.
Presented by James Dawson, Esq., in 1886.

81 Collins Street, Melbourne.

Photographed from a drawing.
Purchased in 1891.

82 Melbourne.

Engraved by J. W. Lowry after a painting by W. F. Evelyn Liardet.

83 Melbourne, from the S. W. Corner of the General Hospital.

A pencil drawing.
Presented by the Hon. John Pascoe Fawkner in 1868. Size, 6 in. x 10 in.

84 The Explorers and Early Colonists of Victoria.

713 photographic portraits in one frame, with key.
Presented by the Hon. George Coppin.

85 View of City and Harbour of Sydney, N.S.W. 1860.

A chromo-lithograph by Day and Son after a painting by Mr. Peacock.
Purchased in 1869.

86 (1) Environs of Sydney.

(2) Crossing a Creek, N.Z.

After a sketch by N. Chevalier.

(3) Port Phillip Heads.

(4) Pigeon Point, Banks' Peninsula, N.Z.

After a sketch by N. Chevalier.

Four etchings by E. L. Montefiore, Esq., presented by the Artist.

87 View on the Banks of the Yarra Yarra.

A pencil drawing.
Presented by the Hon. John Pascoe Fawkner in 1868.

88 View on the Banks of the Yarra Yarra at Mr. Campbell's.

A pencil drawing by George O'Brien.
Presented by the Hon. John Pascoe Fawkner in 1868.

89 William Lonsdale.
A coloured photograph.

FOURTH BAY.

Publications of the Arundel Society.
A collection of chromo-lithographs.

Collection of Autotype Reproductions of Drawings by Old Masters.

FIFTH BAY.

A Collection of Studies in Oil. **By Mrs. G. F. Folingsby.**
Purchased in 1891.

SIXTH BAY.

OIL PAINTINGS.

1 The Honourable James Service. **By George F. Folingsby.**
Presented by Subscribers in 1886. **Canvas,** 61 in. x 40 in.

2 The Honourable Sir Charles Sladen, K.C.M.G. By George F. Folingsby.
Presented by Subscribers in 1884. **Canvas,** 77 in. x 55 in.

3 Portrait of William Saurin Lyster. By George F. Folingsby.
Presented by Subscribers in 1883. **Canvas,** 56 in. x 44 in.

4 George Frederick Folingsby. By John Longstaff.
Purchased in 1891. Canvas, 37 in. x 26 in.

5 Portrait of the late Augustus Henry Tulk. By Philip Lindo.

Presented by Mrs Tulk in 1878. Canvas, 14 in. x 12 in.

6 William I., Emperor of Germany. Painter unknown.

Presented by the Emperor of Germany in 1870. Canvas, 57 in. x 45 in.

7 Sir William John Clarke, Bart. By T. Flintoff.

Presented in 1888. Canvas, 56 in. x 44 in.

8 His Majesty Victor Emanuel, the late King of Italy. By Sabbione.

Presented by His Majesty in 1877. Canvas, 52 in. x 39 in.

9 The Honourable James Macpherson Grant. By E. A'Beckett.

Presented by Mrs. J. M. Grant in 1886. Canvas, 54 in. x 42 in.

10 Sir Redmond Barry, K.C.M.G. By J. Botterill.

Purchased in 1892. Canvas, 30 in. x 25 in.

11 Francis Henty. By Edward A'Beckett.

Presented by Francis Henty's daughters in 1892. Canvas, 23 in. x 19 in.

12 Portrait of Sir Henry Brougham Loch, G.C.B., G.C.M.G. By R. Dowling.

Presented in 1890 by Sir Henry Brougham Loch. Canvas, 31 in. x 50 in.

13 Edward Henty. By J. Kemp.

Presented by Mrs. Henty in 1880. Canvas, 48 in. x 36 in.

14 Portrait of Charles Summers. By Margaret Thomas.

Presented by the Artist in 1881. Canvas, 50 in. x 40 in.

15 The Hon. Duncan Gillies. By Tennyson Cole.

Presented by Subscribers in 1891. Canvas, 31 in. x 56 in.

16 The Right Rev. Dr. Perry, **First Anglican Bishop of Melbourne. By Henry Weigall.**

Presented by Subscribers in 1876. Canvas, 50 in. x 38 in.

17 Sir Charles Darling, K.C.B. **Painter unknown.**

Presented in 1890 by W. A. C. A'Beckett, Esq. Canvas, 30 in. x 24 in.

SEVENTH BAY.

OIL PAINTINGS.

1 The Repentance of St. Peter. **Painter unknown.**

In the manner of Guido Reni.

Presented by the late Canon Bromby, D.D., in 1889. Canvas, 49 in. x 39 in.

2 Madonna and Child.

Copied by C. Molony from the original by Murillo.

The original picture is in the Royal College of Prado, Madrid, and is known to amateurs as the "Virgin with the Rosary."

Purchased in 1870. Canvas, 66 in. x 44 in.

3 Christ at the Column. Attributed to Guido Reni.

Presented by the Hon. Sir James MacBain in 1883. Canvas, 76 in. x 46 in.

4 Sir David Wilkie, Knt., R.A., R.S.A. By himself.

Sir David Wilkie was born at Cults, Fifeshire, in 1785. He was educated at the Trustees' Academy, Edinburgh, and at the Royal Academy, London. The first picture, "The Village Politician," exhibited by him in 1806, at the Royal Academy, established his reputation. He was elected an R.A. in 1811, and was also a member of the Royal Scottish Academy. He was Painter in Ordinary to George IV., and King's Limner for Scotland. Sir David Wilkie, who stood in the foremost rank of his profession, died off Gibraltar in 1841, and was buried at sea.

Purchased in 1878. Canvas, 30 in. x 25 in.

5 Portrait of a Gentleman. Painter unknown.

Purchased in 1876. Canvas, 24 in. x 18 in.

6 Portrait of a Gentleman. Painter unknown.

Presented by G. R. Nash. Esq., in 1870. Canvas, 29 in. x 25 in.

7 Portrait of a Lady. By Sir William Beechey, R.A.

Sir William Beechey was born at Burford, in Oxfordshire, in 1753, and died in 1839. The only picture by this artist in the National Gallery, London, is "Joseph Nollekens," although he exhibited no less than 362 portraits at the Academy, including those of nearly all the famous personages of his time. He came to London to be articled to a solicitor, but, as a matter of fact attended the Academy schools and rapidly made a reputation as a portrait painter. In 1798 he painted a "Review of the Horse Guards," which procured him his election as R.A., and the honour of knighthood.

Purchased in 1865 by the Commissioners of Fine Arts for Victoria. Canvas, 49 in. x 38 in.

8 Portrait of a Gentleman. Painter unknown.

Purchased in 1873. Canvas, 24 in. x 30 in.

9 Portrait of a Lady. Painter unknown.

Presented by R. T. Litton, Esq., in 1886. Canvas, 23 in. x 19 in.

10 Sir Richard Steele. Attributed to Sir Godfrey Kneller.

Presented in 1889 by W. A. C. A'Beckett, Esq. Canvas, 29 in. x 24 in.

11 Portrait. Painter unknown.

Painted in the time of Oliver Cromwell.

Purchased in 1870. Canvas, 15 in. x 12 in.

12 Marriage of St. Catherine.

The original by Sir Anthony Van Dyck is in the Queen's diningroom at Buckingham Palace. This copy is supposed to have been made by one of his pupils.

Purchased in 1869. Canvas, 65 in. x 56 in.

13 Reading a Letter. Attributed to David Teniers.

David Teniers, the younger, was born at Antwerp in 1610, and received his first instruction from his father. He also studied under Adrian Brouwer, and is said to have received lessons from Rubens in the principles of colouring. His extraordinary talents excited universal admiration, and he was employed by the most illustrious personages of his time. The works of Teniers are extremely numerous, and held in the highest esteem.

Presented by Dr. Thomas Black in 1885. Canvas, 19 in. x 23 in.

14 Copy of Titian's Entombment of Christ. By John Longstaff.

Acquired under the terms of the Travelling Scholarship. Canvas, 57 in. x 83 in.

EIGHTH BAY.

OIL PAINTINGS.

1 Portrait of Benjamin Cowderoy. By C. E. Gordon-Frazer.

Presented by the Melbourne Chamber of Commerce in 1890. Canvas, 94 in. x 58 in.

2 The late Lord Melbourne. By Robert Dowling.

Copy from a miniature by Partridge.
Presented by the Hon. Sir W. J. Clarke in 1884. Canvas, 94 in. x 57 in.

3 Portrait of Dr. Maund. By Nicholas Chevalier.

Presented by Miss Maund in 1863. Canvas, 36 in. x 28 in.

4 G. A. Thomson. By T. Flintoff.

Presented by G. A. Thomson, Esq., in 1884. Canvas, 36 in. x 28 in.

5 The Honourable John Pascoe Fawkner. By J. Kemp.

Presented by Subscribers in 1877. Canvas, 48 in. x 36 in.

6 Portrait of George Evans. By Robert Dowling.

Presented by Mrs. Evans in 1886. Canvas, 25 in. x 30 in.

7 Hamilton Hume, F.R.G.S., Explorer. By E. A'Beckett.

Presented by Mrs. Barbour in 1881. Canvas, 55 in. x 41 in.

8 A Highland Still. Painter unknown.

Presented by Dr. Gillbee in 1885. Canvas, 40 in. x 50 in.

9 Italian Boy and Cat. Painter unknown.

Presented by Archbishop Goold in 1867. Canvas, 36 in. x 27 in.

10 Christ and Joseph.

Copy of an old master.

Presented by Miss Mollison in 1885. Canvas, 41 in. x 32 in.

11 Samson Slaying a Philistine. By William Edward Frost, R.A.

W. E. Frost was born at Wandsworth in 1810, and entered the Royal Academy in 1829, painting portraits for some years with considerable success. A disciple of Etty, he made a special study of the nude female figure. His last important work—"A Bacchante"—was exhibited in the Royal Academy in 1874. He died in 1877.

Purchased in 1874. Canvas, 78 in. x 39 in.

12 Fish, Fruit, and Flowers. By Henry Short.

Henry Short resided in Melbourne for some time.

Presented by the Artist in 1861. Canvas, 32 in. x 36 in.

13 Piece of Royal Windsor Tapestry. Subject—Romeo and Juliet. Dated 1886.

Purchased from the Centennial International Exhibition in 1889. Size, 9 ft. 8 in. x 6 ft. 2 in.

14 Martyrdom of St. Sebastian. Painter unknown.

St. Sebastian, a celebrated Christian martyr of the third century, having refused to abjure his faith, was tied to a tree and pierced with arrows.

Presented by Archbishop Goold in 1867. Canvas, 79 in. x 48 in.

15 Fruit Piece (unfinished). By Annie Paulson.

Mrs. Paulson exhibited a few pictures at the Suffolk Street Exhibition between 1838 and 1850.

Presented by J. Paulson, Esq., in 1871. Canvas, 27 in. x 30 in.

16 Langley Dell. By D. O. Hunt.

Presented by Robert T. Litton, Esq., in 1889. Canvas, 12 in. x 14 in.

17 Dutch Peasants. Painter unknown.

Presented by Joseph Reed, Esq., in 1885. Panel, 7 in. x 9 in.

18 Portrait of Edmund Kean. By Henry Singleton.

Presented by Henry Tolman Dwight, Esq., in 1870. Panel, 9 in. x 5 in.

19 Cartoon Head of St. John. Attributed to Raphael.

Presented by the late Canon Bromby in 1889. Panel, 24 in. x 24 in.

20 Portrait of Sir Henry Barkly, G.C.M.G., K.C.B. By Thomas Clark.

Presented by the Government of Victoria in 1864. Canvas, 113 in. x 13 in.

21 Portrait of John Blyth, Esq. By C. E. Gordon-Frazer.

Presented in 1890 by Subscribers. Canvas, 42 in. x 64 in.

22 Portrait of J. B. Were. Painter unknown.

Presented by J. B. Were, Esq., in 1885. Canvas, 50 in. x 40 in.

SOUTH WALL.

1 The Hon. John Basson Humffray, First Commissioner of Mines of Victoria.

A chalk drawing by T. Flintoff.

Presented by H. R. Humffray, Esq., in 1891. Size, 26 in. x 20 in.

2 Captain John Stewart Spotswood.

A chalk drawing by Eglesworth and Binns.

Presented by R. H. Seddon, Esq., in 1887. Size, 22 in. x 16 in.

3 Sir Roderick Impey Murchison, Bart.

Mezzotint engraving by W. Walker after a picture by W. H. Pickersgill, R.A.
Presented by Kenneth Robert Murchison, Esq., in 1894.

4 The Rev. James Clow.

A coloured plaster medallion by Thomas Woolner, R.A.
Purchased in 1891.

5 Marcus Clarke.

A plaster medallion by A. Saupe.
Presented by the Hon. Sir George Verdon in 1893.

6 Captain Francis Rawdon Moira Crozier, R.N.

A coloured photograph.
Presented by W. S. Magee, Esq., in 1882.

7 The Hon. Francis Scott.

A lithograph.
Presented by G. W. Rusden, Esq., in 1893.

8 Admiral John Lort Stokes.

A lithograph.
Presented by the Admiral through John King, Esq., in 1881.

9 J. Cashel Hoey, C.M.G.

A lithograph.
Purchased in 1892.

10 Ancient Ruins—Rome.

A photograph.
Presented by Dr. Rowe in 1875.

11 St. Peters, Rome.

A photograph.
Presented by Dr. Rowe in 1875.

12 Aurora.

A photograph after a fresco by Guido Reni.
Presented by Dr. Rowe in 1875.

13 The Colosseum.

The Amphitheatrum Flavium, or as it has been called since the time of Bede, the *Colosseum* or *Coliseum* (probably on account of its gigantic size), was built in the reigns of Vespasian and Titus.

A photograph.
Presented by Dr. Rowe in 1875.

14 La Colonna Antonina.

An engraving by Cav. Giovanni Battista Piranesi.

15 Bronze Medallion of Charles Joseph La Trobe, C.B. By Thomas Woolner, R.A.

16 An Indian Prince. Painter unknown.

An oil painting.

17 Sir Redmond Barry, K.C.M.G.

A plaster medallion by Margaret Thomas.
Purchased in 1881.

18 James Watt's Workshop. By J. Pratt.

Presented by Messrs. George and Richard Tangye, of Birmingham, in 1889. Canvas, 16 in. x 20 in.

19 Destruction of the Druids in Anglesea. Painter unknown.

Presented by the Hon. Thomas Loader in 1867. Canvas, 24 in. x 55 in.

VI.—THE ROTUNDA.

SCULPTURE.

1 Summer. By G. M. Benzoni.

Marble bust.
Presented by Peter Davis, Esq., in 1864.

2 Bust of John Ruskin. By Sir J. E. Boehm, R.A.

Cast and presented in 1876 by the Spence's Metal Company of London.

3 Bronze Head of Dionysius.

Reproduced from the original in the Naples Museum.
Purchased in 1892.

4 Vase.

Marble.
Presented by James Chapman, Esq., in 1885.

5 Bronze Head of Dante Alighieri.

Reproduced from the original in the Naples Museum.
Purchased in 1892.

6 Berenice.

Bust. Bronze reproduction from the original in the Naples Museum.

Purchased in 1892.

7 Bust of Sir Henry Cole, K.C.B. By Sir J. E. Boehm, R.A.

Cast and presented in 1876 by the Spence's Metal Company of London.

8 Bust of Captain Charles Sturt. By Charles Summers.

Marble.
Presented by Subscribers in 1872.

9 Goat and Kid. By G. Lombardi.

Group in marble.
Purchased in 1884.

10 Group.—Young Woman with Cupid. By G. Lombardi.

Marble.
Presented by the Hon. James Goodall Francis in 1884.

11 Bust of a Roman Peasant (Female). By C. Summers.

Marble.
Presented by T. B. Payne, Esq., in 1880.

12 Bust of a Roman Peasant (Male). By C. F. Summers.

Marble.
Presented by T. B. Payne, Esq., in 1880.

13 Dancing Faun.

Bronze statuette. Reproduced from the original in the Naples Museum.
Purchased in 1892.

14 Fowls.—Cocks Fighting. By G. Lombardi.

Group in marble.
Purchased in 1884.

15 Bust of the Right Rev. Charles Perry, D.D., First Anglican Bishop of Melbourne. By Charles Summers.

Marble.
Presented by Sir W. J. Clarke in 1876.

16 Bust of Sir Redmond Barry, K.C.M.G. By Charles Summers.

Marble.
Presented by Subscribers in 1860.

17 Bust of James Henning Webb.

Marble.
Presented by Mrs. C. Agg in 1886.

18 Bust of Sir Redmond Barry, K.C.M.G. By Thomas Woolner, R.A.

Marble.
Presented by Subscribers in 1881.

19 Bust of the Hon. Sir John O'Shanassy, K.C.M.G. By Marshall Wood.
Marble.
Presented by Matthew O'Shanassy, Esq., in 1888.

20 The Esquire. By A. Carrier.
Bronze statuette.
Presented by John King, Esq.

21 Autumn. By G. M. Benzoni.
Marble bust.
Presented by Peter Davis, Esq., in 1864.

22 Winter. By G. M. Benzoni.
Marble bust.
Presented by Peter Davis, Esq., in 1864.

23 The Knight. By A. Carrier.
Bronze statuette.
Presented by John King, Esq.

24 La Puberta. By Lucca Flaminio.
Marble bust.
Presented by the Hon. Sir George Verdon in 1867.

25 Bust of the Hon. Sir Charles Gavan Duffy, K.C.M.G. By Charles Summers.
Marble.
Presented by Subscribers in 1877.

26 Rape of the Sabines.
Marble group. From the original at Florence by John of Bologna.
Presented by the family of the late James Purves, Esq., in 1878.

27 Rebecca at the Well.
Marble statuette.
Purchased in 1876.

28 Bust of His Royal Highness the Duke of Edinburgh. By Charles Summers.
Marble.
Presented by Abraham Linacre, Esq., in 1873.

29 Advance Australia. Britannia Unveiling Australia. By George Halse.
Group in marble.
Presented by Mrs. L. J. Kelly.

30 Bust of Gustavus Vaughan Brooke. By Charles Summers.

Marble.
Presented by Subscribers in 1869.

31 Bust of the Very Rev. Dean Macartney. By Percival Ball.

Marble.
Presented by Subscribers in 1889.

32 Bust of Sir Henry Barkly, G.C.M.G., K.C.B. By Charles Summers.

Marble.
Presented by the Government of Victoria in 1865.

33 Bust of Viscount Canterbury. By Charles Summers.

Marble.
Purchased in 1877.

34 Bust of the Right Rev. James Moorhouse, D.D. By Percival Ball.

Marble.
Presented by Subscribers in 1890.

35 Bust of Edward Wilson. By Thomas Woolner, R.A.

Marble.
Presented by Subscribers in 1868.

36 Fowls.—Hen and Chickens. By G. Lombardi.

Group in marble.
Purchased in 1884.

37 Venus de Medici.

Marble statuette. From the original by Cleomenes of Athens, in the Tribune of the Uffizi, Florence, to which place it was transferred in 1680 from the Gardens of the Medici.
Presented by the family of the late James Purves, Esq., in 1878.

38 Bust of Sir George Macleay, K.C.M.G. By Charles Summers.

Marble.
Acquired in 1872.

39 Spring. By G. M. Benzoni.

Marble bust.
Presented by Peter Davis, Esq., in 1864.

40 His Royal Highness the Prince of Wales. By Charles Summers.

Marble statue.
Presented by Sir W. J. Clarke in 1878.

41 Perseus. By J. Cranari.

Marble statue of the famous Argive hero, son of Zeus and Danaë.
Presented by James Chapman, Esq., in 1885.

42 Euterpe, the Muse of Lyric Poetry.

Marble statue. A copy from the original in the Vatican.
Presented by James Chapman, Esq., in 1885.

43 Her Majesty the Queen. By Charles Summers.

Marble statue.
Presented by Sir W. J. Clarke in 1878.

44 Maternal Affection. By Charles Summers.

Marble statue.
Purchased in 1884.

45 The Shunammite Woman. Modelled by G. Lombardi and executed by C. F. Summers.

Marble statue.
Purchased in 1884.

46 His Royal Highness the Prince Consort. By Charles Summers.

Marble statue.
Presented by Sir W. J. Clarke in 1878.

47 Eve. Attributed to Canova.

Marble statue.
Presented by James Chapman, Esq., in 1885.

48 Flora (Latin Goddess of Spring and Flowers). By J. Gott.

Marble statue.
Presented by James Chapman, Esq., in 1885.

49 Her Royal Highness the Princess of Wales. By Charles Summers.

Marble statue.
Presented by Sir W. J. Clarke in 1878.

50 John Pascoe Fawkner. By Charles Summers.

Marble bust.

51 George Watson on Cavalier. By F. S. Sheldon.

A bronze statuette.
Purchased in 1894.

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52 Reproduction of Plates 3 and 4 of the Book of the Dead.

The Egyptian Papyrus, of which a *fac-simile* was published in 1890 by the Trustees of the British Museum, was obtained in 1888 by Mr. E. A. W. Budge for the Museum. It contains a series of chapters belonging to the collection of religious texts generally known by the name of the Book of the Dead. An offer by Dr. Maunde Thompson, the Principal Librarian of the British Museum, to have plates 3 and 4 reproduced on a large scale for the Melbourne National Gallery was gladly accepted by Sir George Verdon during his visit to Europe in 1890.

VII.—THE CAST GALLERY.

1 Bust of Her Majesty Queen Victoria.
In Parian marble.
Presented by Captain Lonsdale.

2 Venus.
Original by John Gibson, R.A., in the possession of Mr. Robert Berthon Preston, of Liverpool.
Presented by C. E. Bright, Esq.

3 Prince Albert.

4 The Holy Family.
Original by Michel Angelo in the Royal Academy, London.
Presented by Marshall Wood, Esq.

5 Monument to William Shakespeare in Westminster Abbey.
Original by Peter Sheemaker.

6 Bacon.

7 O'Connell.

8 Edmund Burke.

9 Gladstone.

10 Lord John Russell.

11 Bright.

12 Our Lord and Apostles.
Original by Donatello.

13 J. P. Fawkner.

14 Queen Victoria.

15 Dorothea.

Original by John Bell, in the collection of the Marquis of Lansdowne.
Presented by Henry Moor, Esq.

16 Sir Redmond Barry.

17 Palmerston.

18 Lord Eldon.

19 Charles James Fox.

20 Night.

Original by Thorwaldsen.

21 Locke.

22 Musidora.

An imaginary person introduced by Thomson in his poem of "The Seasons":— Summer, 1276. Original by James Legrew.
Presented by Mrs. Moor.

23 Lord Brougham.

24 Sir Robert Peel.

25 Lord Chatham.

26 Mercury and Pandora.

Original by John Flaxman.
Presented by Marshall Wood, Esq.

27 Benjamin Franklin.

28 Diana.

Original by G. M. Benzoni.
Presented by M. C. E. Labilliere, Esq.

29 Cobden.

30 William Pitt.

31 The Right Hon. Sir John Young, First Baron Lisgar, P.C., G.C.B., G.C.M.G.

32 Faraday.

33 Tambourine Girl.

Original by Danton.
Presented by James Purves, Esq.

34 The Hon. H. Parkes.
Presented by Sir James Martin.

35 Richard Heales.
Original by Todt.
Presented by Subscribers.

36 Pericles.
Original found about a mile from Tivoli, in the Pianelli di Cassio, 1781.

37 Virgin.
Original by F. Davis.

38 Perseus.
Original by Canova.

39 John Hunter.
Original by Chantrey.

40 Buffon.

41 Richard Owen.

42 Mercury.
The original by Thorwaldsen is in the collection of the Prince of Augustenberg.

43 Sacrifice of Noah. Panel from the Gate of the Battisterio, Florence.
Original by Ghiberti.

44 Creation of Adam and Eve, and the Expulsion from Eden. Panel from the Gate of the Battisterio, Florence.
Original by Ghiberti.

45 Sacrifice of Abraham. Panel from the Gate of the Battisterio, Florence.
Original by Ghiberti.

46 Lynceus and Hypermnestra.
Original by Charles Summers.

Lynceus, one of the fifty sons of Ægyptus, King of Arabia, married Hypermnestra, one of the fifty daughters of Danaus, King of Argos. Danaus commanded his daughters to put their husbands to death on the night of their marriage. Hypermnestra alone spared her spouse, who, on the death of Danaus, succeeded to the throne of Argos.

Presented by the Sculptor.

47 George Stephenson.

48 James Watt.

Original by Chantrey.

49 Brunel.

50 A Bacchante.

Original by Pradier.

51 Sir William A'Beckett.

Presented by W. A. C. A'Beckett, Esq.

52 Dr. Johnson.

53 Macaulay.

54 Thackeray.

55 Carlyle.

56 Sir Walter Scott.

57 Greek Slave.

Original by Hiram Powers.
Presented by Major-General Valiant.

58 Eve at the Fountain.

The original by Edward H. Baily is at the Bristol Museum.

59 Friedrich Schiller.

60 Goethe.

61 Flora.

The Latin Goddess of Spring and Flowers.
Original in the Capitol. Found A.D. 1744, in the ruins of Hadrian's Villa, at Tivoli.

62 John Dryden.

63 Moore.

64 The Graces.

The three Graces—Aglaia, Euphrosyne and Thalia.
Original by Canova.

65 The Triumph of Truth. By E. B. Mackennal.

Awarded by the Trustees of the Public Library the 2nd prize of £100 in the competition for a companion statue to Boehm's "St. George and the Dragon."
Acquired in 1891.

66 Raphael.

67 Michel Angelo.

68 Charles Summers.

Presented by James Scurry, Esq.

69 Lord Byron.

Original by Edward H. Baily.

70 Wordsworth.

71 Milton.

72 Narcissus.

Original by William Theed.

Narcissus fell in love with his own image reflected in a fountain, pined, and died. His body was transformed into the flower which bears his name.

Presented by Mrs. Westby.

73 Cowper.

74 Coleridge.

75 Keats.

76 The Triumph of Art.

Designed in 1891 to the order of the Trustees of the Public Library by M. Mercié.

77 Chantrey.

78 Palladio.

79 Sir Christopher Wren.

80 Battaglia di Ballejo.

Original by Michel Angelo.

81 Handel.

82 Achilles.

83 Terpsichore, the Muse of Choral Dance and Song.

The original by Canova is in the Gallery of Sommariva, at Paris.

84 Florence Nightingale. By Miss Hilary B. Carter.

Parian marble.

Presented by George F. Bartrop, Esq.

85 Priestley.

Presented by Dr. Aubrey Bowen.

86 Inigo Jones.

87 Mulready.

88 Reynolds.

89 The Hours Leading the Horses of the Sun.

Original by John Gibson, R.A.
Presented by Marshall Wood, Esq.

90 Felix Mendelssohn-Bartholdy.

91 Virgin and Child.

The original by Donatello is in the South Kensington Museum.

92 Venus.

Original by Thorwaldsen.
Presented by W. Mitchell, Esq., R. Thompson, Esq., and J. Richardson, Esq.

93 Cruikshank.

94 George Washington.

95 Napoleon Bonaparte.

96 Entry of Cosmo de Medici into Florence.

Original by Michel Angelo.

97 Newton.

98 Innocence.

Original by John Henry Foley, R.A.
Presented by Henry Arthur Smith, Esq.

99 The Diggers.

Original by E. Todt.
Presented by Mrs. Leonard Terry.

100 Lord Nelson.

101 Oliver Cromwell.

102 Duke of Wellington.

103 Boys.

Three panels by Hubert Longe, called Fiamingo.

104 Herschel.

105 Charles I.

106 Maternal Affection.

Original by E. H. Baily.
Presented by William Fletcher, Esq.

107 Leopold II., King of the Belgians.

Presented by the Commissioners for Belgium in 1881.

108 Venus.

Original by Canova.

109 Innocence.

Presented by Captain Lonsdale.

110 Group of the Ægina Warriors.

The original statues formed portion of the pediments of the Temple of Athena at Ægina. They were purchased by Ludwig, King of Bavaria, for the Glyptothek at Munich, after having been restored by Thorwaldsen.

Presented by the Royal Bavarian Ministry of Public Instruction, through the Commissioner for Germany.

VIII.—THE CAST GALLERY.

(ANTIQUE ROOM.)

1 **The Fates.**

Original in the British Museum.

The "Fates" (No. 1), "Ilissus" (No. 49), "Horse's Head" (No. 58), and "Theseus" (No. 110), are taken from the Elgin Marbles brought from Athens by Lord Elgin in the beginning of the present century. These figures formed portion of the majestic composition in the pediments of the Parthenon, the temple erected at Athens during the administration of Pericles in honour of the goddess Athene.

2 **Venus Anadyomene (Venus rising from the sea).**

Original in the Vatican, Rome. Found at Salome, by the spring of Aqua Virgine, about eight miles from Rome.

Presented by Edward William Jeffreys, Esq.

3 **The Holy Family.**

A medallion in relief.

The original by Michel Angelo is in the Royal Academy.

4 **Frieze of Parthenon.**

Forty slabs.

See note under No. 1.

5 **Canephora.**

The original by Criton and Nicolaus is in the British Museum.

The Canephoræ were maidens of the highest rank at Athens, who assisted at the sacred festivals held in honour of Pallas Athene, and bore upon their heads offerings to the goddess.

RESTORATIONS :—The lower right arm, left foot, and a small portion of the upper part of the modius.

Presented by Mrs. Barry.

6 Canephora.

The original by Criton and Nicolaus is in the British Museum.
See No. 5 above.
Presented by Sir William A'Beckett.

7 Euterpe, the Muse of Lyric Poetry.

Original in the Vatican.

8 Venus Genitrix.

Venus Genitrix, or mother of the Roman people through her son Æneas.
The original by Praxiteles is in the Louvre.

9 Æschines.

Original in the Naples Museum.

10 Bacchus and Ampelus.

Original in the British Museum.

Bacchus, the god of wine. Ampelus, his companion, a Phrygian youth, was thrown from the back of a bull and killed. His body was changed into a vine.

Restoration:—The whole of the right arm of Bacchus.

Presented by Lachlan Mackinnon, Esq.

11 Ariadne.

Daughter of Minos, King of Crete.
Original in the British Museum.
Presented by George James, Esq.

12 Bust of Hadrian.

Original in the British Museum.

13 Diana *à la Biche.*

Original in the Louvre, Paris. It is not known where or when it was found. It was once at Versailles, and hence is also sometimes called "Diane de Versailles."

It is likely that the goddess appears here as protecting the hind (biche) from wild beasts, against which she is drawing her bow.

Restorations:—Part of right arm and both hands; nose, ears, part of neck, right foot and upper part of leg; stag, nearly all.

14 Head of Julius Cæsar.

Original in the British Museum.

15 Bacchus and Ariadne.

Ariadne fell in love with Theseus when he was sent by his father to convey the tribute of the Athenians to the Minotaurus, and gave him the clue of thread by means of which he found his way out of the Labyrinth. Theseus in return promised to marry her, but, according to the more common tradition, left Ariadne at Naxos, either because he was ashamed to bring a foreign wife to Athens, or because he was carried away by a storm, or because he was forced to leave her by Dionysus (Bacchus), who made her his wife, and placed amongst the stars the crown which he gave her at their marriage.

Presented by Joseph Hawdon, Esq.

16 Bust of Trajan.

Original in the British Museum.

17 Venus or Dione.

Original in the British Museum.

It has not been determined whether this is the statue of Venus or of the female Titan, Dione. It is commonly spoken of as the Townley Venus, from the name of the collector from whom it was acquired.

RESTORATIONS:—Left arm, right hand, tip of nose.

18 Bust of Seneca.

19 The Arrotino, or Listening Slave.

Original in the Royal Gallery, Florence.

20 Assyrian or Nimroud Collection of Friezes in the British Museum.

Two slabs.

21 Head of Demosthenes.

Original in the British Museum.

22 Pudicitia.

An impersonation of modesty deified and worshipped in Greece and at Rome. Original in the Vatican.

RESTORATION:—Portion of drapery on left side.

Presented by Miss Barry.

23 Bust of Verus.

24 Laocoon.

The original, by Agesander, Athenodorus, and Polydorus, is now in the Vatican. It was found in Rome in 1506, on the site of the palace of Titus.

The Greeks failing in their efforts to take Troy, pretended to sail home, leaving behind them a wooden horse, in which armed warriors were concealed.

While the Trojans were deliberating whether they would admit the horse into the city or destroy it, Laocoon, a Trojan hero who plays a prominent part in the post-Homeric legends, hastened to them, and warned them against the danger which they might bring upon themselves, at the same time thrusting his lance into the side of the horse. The horse, however, is drawn into the city, and as Laocoon is preparing to sacrifice to Poseidon, suddenly two huge serpents are seen swimming towards the Trojan coast from Tenedos. The serpents first encircle the sons of Laocoon, and then their father, who comes to their assistance. All are killed. Laocoon suffered this fearful death because he thrust his lance into the side of the horse, or because Poseidon, being hostile to the Trojans, wanted to show them, in the person of Laocoon, what fate they all deserved, or because, according to another account, he disobeyed the will of Apollo.

RESTORATIONS:—The right arm restored by Montorsoli; the right arms and legs of the sons by Cornacchini.

25 Bust of Apollo Belvedere.

Original in the Vatican.

26 Morning.

Original by Thorwaldsen.

27 Demosthenes.

Original in the Vatican.

RESTORATIONS:—The hand and the scroll.

Presented by R. Molesworth Greene, Esq.

28 Mercury and Pandora.

Original by John Flaxman.

29 Bust of Diana.

Presented by James Murphy, Esq.

30 Cyparissus.

Original in St. Petersburg.

A youth of the Isle of Cea, one of the Cyclades. He inadvertently killed his favourite faun, and, overwhelmed with grief, was transformed into a cypress tree.

Presented by James Malcolm, Esq.

31 Male Head.

Presented by Marshall Wood, Esq.

32 Amazon.

The original by Polyclitus is in the Vatican.

The Amazons were a race of warrior women who inhabited the territory of the Caucasus.

Restoration :—The arms.

Presented by John Werge Howey, Esq.

33 Head of Severus.

34 Castor and Pollux.

Called the Dioscuri, that is, sons of Zeus. Castor was famous for his skill in taming and managing horses, and Pollux for his skill in boxing. Original in the Vatican.

35 Head of Augustus Cæsar.

Presented by Master Jeffreys.

36 Diana.

Original in the Louvre.

Restorations :—Nose, right hand, left sleeve, left elbow, right foot to ankle, half of left leg.

37 Apollino.

Original in the Royal Gallery, Florence.

Restorations :—This statue was broken in pieces some years since by the fall upon it of Vandyck's portrait of Charles V.; restored by Bartolini.

38 Cupid and Psyche.

Original in the Capitol, Rome.

Restorations :—Nose, chin, right hand, left foot of Cupid.

39 Bust of Numa Pompilius.

40 Polyhymnia.

The Muse who presided over Lyric Poetry.

Original in the Vatican.

Presented by William Kaye, Esq.

41 Æschines.

Original in the Naples Museum.

42 Minerva.

The original, now in the Vatican, was for a long time in the possession of the Giustiniani family, and afterwards passed into the collection of Lucien Buonaparte, from whom it was eventually purchased by Pope Pius VII., and added to the Gallery of the Vatican. It represents the Goddess as the beneficent protector and preserver of health by her wisdom.

Presented by Major-Gen. Sir Edward Macarthur, C.B.

43 Mars.

Original in the Vatican.

44 Bust of Clytie.

From the Antique in the British Museum.

The water-nymph Clytie fell in love with Apollo, but meeting with no reciprocation of her passion, became changed into a sunflower.

Presented by James Murphy, Esq.

45 Sophocles.

Original in the Lateran, Rome.

Presented by Colonel Barry, R.A., C.B.

46 Adonis.

Original in the Vatican, Rome.

Different accounts of the parentage of this youth are given. Venus loved him, and shared with him the pleasures of the chase, though she always cautioned him against the wild beasts. At last he was killed by a wild boar.

Restorations :—Both arms, right leg, top of nose; by Albracini.

47 and 48 Discobolus (standing).

The original by Naucydes is in the Vatican.

Presented by James Murphy, Esq.

49 Ilissus.

The deified impersonation of the river which ran through the southern plain of Attica.

See No. 1, page 142.

50 and 51 Discobolus. Throwing Quoit.

Original in the British Museum.

Restorations :—Left hand, by Albani; head broken off and rejoined.

Presented by James Murphy, Esq.

52 Bust of Laocoon.

See No. 24, page 144.

Presented by James Scurry, Esq.

53 Mercury.

54 Diana.
Mask.

55 Moses.
Mask.
Original by Michel Angelo.

56 Bust of W. H. Hovell.

57 Head of Pericles.

58 Horse's Head.
See No. 1, page 142.

59 Bust of Publius Virgilius Maro.

60 Bust of Franc Sadleir, D.D., Provost, T.C.D.
Presented by William Corcoran, Esq.

61 Bust of Harvey.

62 Head of Robinson.

63 Torso (life size).
Original in the British Museum.
Presented by James Murphy, Esq.

64 Torso (life size).
Original in the British Museum.
Presented by Marshall Wood, Esq.

65 Head of Sophocles.
Original in the British Museum.

66 One of the Children of Niobe.
Mask.

Apollo and Artemis slew the children of Niobe, who had presumed, by reason of the number of her children, to consider herself superior to Leto, who had given birth only to two.

67 Head of Nero.

68 Athlete.
The original by Lysippus is in the Vatican.
RESTORATIONS :—Extremity of right hand.

69 Bust of Homer.

70 Frieze of the Temple of Apollo.

71 Boy's Head.
Original by Donatello.
Presented by the Education Department, Melbourne.

72 Venus de Medici.

The original by Cleomenes of Athens is in the Tribune of the Uffizi, Florence.

RESTORATIONS:—Right arm, left arm from the elbow downwards; by Bernini.

73 and 74 Heads of Nicolo da Uzzano.

Originals by Donatello.

Presented by the Education Department, Melbourne.

75 Germanicus.

By some supposed to be a figure of Mercury.

Original in the Louvre.

RESTORATIONS:—Thumb and forefinger of right hand.

76 Antique Head.

Presented by the Education Department, Melbourne.

77 Jason.

Original in the Louvre.

RESTORATIONS:—Right hand and part of arm, left arm. The head is not of the same marble as the rest of the figure, and was probably supplied from another figure. It is said, also, that the ploughshare was added.

78 Female Head.

Terra Cotta.

The original by Donatello is in the South Kensington Museum.

Presented by the Education Department, Melbourne.

79 Head of Juno.

80 Boy Extracting Thorn.

The original bronze, attributed to Pasiteles, is in the Capitol, Rome.

81 Winged Victory.

Relief from the Frieze of the Temple of Nikè Apteros.

Original in the British Museum.

Presented by the Education Department, Melbourne.

82 Bust of the Venus of Milo or Melos (Venus Victrix).

Original in the Louvre. Found in 1820 by a Greek peasant in the island of Melo or Melos.

Presented by James Murphy, Esq.

83 and 84 Madonna.

Masks. The Originals by Michel Angelo are in the South Kensington Museum.

85 Apollo Belvedere.

The original of this statue of Apollo was found about the beginning of the sixteenth century at Porto d' Anzio, the ancient Antium. It was purchased by Julius II. when Cardinal, and placed in the Belvedere of the Vatican, whence it derives its name.

RESTORATIONS:—Left hand, or arm, according to Perkins, by Montorsoli; right arm and leg are antique, but have been attached unskilfully.

86 A Dead Christ.

Original by Donatello.

87 Female Head.

Presented by Marshall Wood, Esq.

88 Cupid.

The original by Michel Angelo is in the South Kensington Museum.

89 Child's Head.

Original by Donatello.

90 Doryphorus.

91 Dying Gladiator.

Original in the Capitol, Rome.

The best authorities now regard this work as representing a Gaul dying, not a Gladiator, and it is supposed to be one of a series of figures illustrating the incursions of the Gauls into Greece.

RESTORATIONS:—Right hand, said to be by Michel Angelo.

92 Virgin and Child.

Original by Donatello.

93 Head of Diomedes.

One of the Homeric heroes.

Presented by James Murphy, Esq.

94 Antinous.

Original in the Capitol, Rome.

A Bithynian youth (page of the Emperor Hadrian) drowned in the Nile A.D. 122. The Emperor, inconsolable for his loss, rebuilt the city of Besa and called it Antinoopolis. He caused Antinous to be enrolled amongst the gods, gave his name to a star, and had temples erected to him in Egypt and Greece.

RESTORATIONS :—Right leg from below the knee, left foot, two fingers of right hand, left forearm. The right hand originally held a Caduceres.

95 The Boxers, Lottatori, or Wrestlers, or Pancratiasts.

Original in the Royal Gallery, Florence.

Supposed to represent Phædimus and Tantalus, sons of Niobe, slain by Apollo, and to have formed part of the group of Niobe and her children, which occupied the tympanum of the pediment of the temple of Apollo at Rome. One of the proofs adduced to displace the idea that they are boxers is that in the statues of professional pugilists the cartilage inside the ear is generally crushed and flattened, as if by blows.

RESTORATIONS :—The head of each, left arm, right leg from knee, left foot.

96 Plato.

97 The Dancing Faun.

Original in the British Museum.

98 The Holy Family.

Relief. The original by Michel Angelo is at Florence.

99 Dancing Faun.

From a bronze in the Naples Museum.

100 Head of Diogenes.

Original in the British Museum.

101 Youth Invoking the Gods.

Original bronze in Berlin.

102 Apollo Sauroktonos (Apollo the Lizard Killer).

The original by Praxiteles is in the Louvre.

RESTORATION :—Right hand from above wrist.

103 Hercules and Omphale.

The original by John Flaxman is in the London University. The body and thighs of Hercules are borrowed from the celebrated Torso Belvedere by Apollonios of Athens.

The history and labours of the demigod Hercules are known. Omphale, Queen of Lydia, to whom Hercules submitted himself as a slave for three years, in order to expiate his crime of having murdered Iphitus.

104 Anatomical Figure.

Presented by the Education Department, Melbourne.

105 Julian de Medici, Duke of Nemours.

The original by Michel Angelo is in the Church of St. Lorenzo, Florence.
Presented by J. V. F. L. Foster, Esq.

106 Venus of Milo or Melos (Venus Victrix).

Original in the Louvre. Found in 1820 by a Greek peasant in the island of Melo or Melos.

107 Dancing Faun.

Original in the Royal Gallery, Florence.
RESTORATIONS: — The head and arms by Michel Angelo.
Presented by James Murphy, Esq.

108 The Fighting Gladiator.

The original by Agasias is in the Louvre.
RESTORATIONS:—Right arm and right ear.
Presented by James Murphy, Esq.

109 Hermes and Dionysos, or Mercury and Infant Bacchus.

The original by Praxiteles is in the Royal Museum, Berlin.

110 Theseus, Son of Ægeus, King of Athens.

See No. 1, page 142.

111 Mercury.

Original by John of Bologna.

112 Dancing Faun.

See note to No. 13, page 130.

113 Anatomical Figure.

Original by Houdan.

114 The Hours Leading the Horses of the Sun.

Original by John Gibson, R.A.

IX.—TABULAR STATEMENT

Showing the mode and date of acquisition of Works of Art contained in the La Trobe and Stawell Galleries, the Vestibule, and the McArthur Gallery, on the 30th June, 1894, and the prices paid for those purchased.

In this Statement the Works of Art are enumerated in the order of the numbers given to them on the frames and in the Catalogue.

In the fourth column P means purchase; D, donation.

I.—THE LATROBE GALLERY.

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
1	Fight between the Ship of the Line "Jupiter" and the French Frigate "Preneuse"	Bennetter, T. ...	P	1884	300	0
2	Don Quixote	Demont, A. L. ...	P	1893	360	0
3	The Mitherless Bairn... ...	Faed, T.	P	1886	1,000	0
4	Wheat	Linnell, J.	P	1888	1,750	0
5	The First Snow on the Tyrolean Alps	Weber, O.	P	1868	420	0
6	A Question of Propriety ...	Long, E.	P	1871	630	0
7	Quatre Bras	Thompson, E. (Lady Butler)	P	1884	1,500	0
8	A Roman Holiday	Rivière, B.	P	1888	1,575	0
9	Psyché aux Enfers	Hillemacher, E. E....	D	1872		
10	Dutch Pastures (Morning) ...	Baisch, H.	P	1889	170	0
11	The First Cloud	Orchardson, W. Q....	P	1887	2,750	0
12	A Flitting Gleam before the Storm	Heffner, K.	P	1884	500	0
13	Challenged	Pettie, J.	D	1885		
14	Autumnal Showers	Graham, P.	P	1869	577	10
15	Love's Pilgrimage	Gysis, N.	P	1884	630	0
16	Anguish	Schenck, A. F. A. ...	P	1880	1.200	0
17	La Défenestration	Brozik, V.	P	1890	1,500	0
18	An Easterly Breeze	Graham, P.... ...	P	1887	1,350	0
19	The Traitor	Joanowitch, P. ...	P	1890	1 000	0
20	A Salvation Army Shelter ...	Johnson, E. B. ...	P	1892	262	10
21	The Stud Herd	Braith, A.	P	1884	210	0
22	Still Life	Lance, G.	P	1883	60	0
23	Marigolds	Fantin-Latour, H. ...	P	1892	45	0
24	Venetian Girl	Blaas, E. de ...	P	1879	37	10
25	Love and Death	Watts, G. F. ...	P	1888	840	0
26	African Panthers	Swan, J. M. ...	P	1892	520	0

No	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
27	Cottage Interior	Frère, E.	P	1872	35	0
28	Venetian Girl	Blaas, E. de	P	1879	37	10
29	Temptation of Christ	Scheffer, A.	P	1886	126	0
30	The Vintage Festival	Alma-Tadema, L.	P	1888	4,000	0
31	Portrait of Lord Tennyson	Watts, G. F.	P	1888	630	0
32	The Poultry Vendor	Schendel, P. Van	P	1864	84	0
33	The Standard Bearer	Seiler, C.	P	1884	315	0
34	Card Players in a Country Inn	Kauffmann, H.	P	1879	125	0
35	Départ du Fiancé	Koller, G.	P	1864	262	10
36	Arrest for Witchcraft	Pettie, J.	P	1876	600	0
37	Early Morning, Bavaria	Heffner, K.	P	1891	150	0
38	French Artists in a Spanish Posada	Vibert, J. G.	P	1864	63	0
39	Summer has gone on Swallows' Wings	Walton, F.	P	1892	300	0
40	The Seine at Saint-Pierre, near Louviers	Nozal, A.	P	1891	200	0
41	The Crisis	Dicksee, F.	P	1891	1,260	0
42	No Surrender	Gow, A. C.	D	1879		
43	The Right of Way	Walker, F.	P	1891	1,260	0
44	Ulysses and the Sirens	Waterhouse, J. W.	P	1891	1,260	0
45	An English Summer's Day	North, J. W.	P	1892	350	0
46	The Last Moments of Chlodobert	Maignan, A.	D	1885		
47	After the Massacre of Glencoe	Graham, P.	D	1889		
48	Queen Esther	Long, E.	P	1879	1,600	0
49	After the Storm, Norwegian Coast	Gude, H. F.	D	1889		
50	Ben Eay, in Sunset Glow	Davis, H. W. B.	P	1883	1,600	0
51	Sea Idylls	Bunny, R. C. W.	D	1892		
52	The Convalescent	Tattegrain, F.	D	1885		
53	In the Fields	Souza-Pinto, J. J. de	P	1893	160	0
54	Rotterdam	Webb, J.	P	1869	500	0
55	Deer Stealers Pursued by Sleuth Hounds	Rivière, B.	P	1876	700	0
56	Young Bull and Herdsman	Boehm, Sir J. E.	P	1888	1,000	0

II.—The STAWELL GALLERY.

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
1	Countrymen at Dinner ...	Stanfield, W. C. ...	P	1877	3	5
2	Emily	Campi, G.	P	1876	10	0
3	The Haunt of Ancient Peace	Phillott, C.	P	1871	15	15
4	Flower Painting	Rowan, Mrs. E. ...	P	1890	52	10
5	Waimea Plains, near Nelson...	Gully, J.	P	1870	6	6
6	View near Corinth	Unknown	D			
7	View on the River Yarra, near Richmond	Davies, H. E. ...	P	1871	15	0
8	A Gray Day on the Thames...	Field, W.	P	1872	31	10
9	Landscape, near Manaton, Devon	Morrish, W. S. ...	P	1871	10	10
10	View of King's College, Cambridge	Clarke, G. R. ...	P	1875	20	0
11	Flower Painting	Rowan, Mrs. E. ...	P	1890	52	10
12	Wreck off Kentish Coast ...	May, W. W. ...	P	1883	52	10
13	Miss Hardcastle	Parker, J.	P	1892	50	0
14	Dunglass on the Clyde ...	Leitch, W. L. ...	P	1891	12	12
15	The Farm	Fahey, E. H. ...	P	1892	40	0
16	Sunset, Cannock Chase ...	Evans, B.	P	1883	115	10
17	Changing Pasture	Weedon, A. W. ...	P	1892	80	0
18	Fishing Boats, Rhyll	Herne, C. E. ...	P	1892	60	0
19	Boscastle Harbour	Severn, W.	D	1885		
20	Windsor Castle	Law, D.	P	1883	126	0
21	Death of Jean Goujon ...	Wehnert, E. H. ...	P	1874	52	10
22	Cliveden, on the Thames ...	Law, D.	P	1883	126	0
23	Morning, Lake Omeo ...	Mather, J.	P	1891	42	0
24	Venice (Evening)	Cook, E. W. ...	P	1892	60	0
25	The Tide of the Solway ...	Hall, G. L.... ...	P	1879	50	0
26	The Boundary, Snowy Mountains, N.Z.	Gully, J.	P	1870	50	0
27	Lake Wanaka and Mt. Aspiring	Richmond, J. C. ...	P	1872	21	0
28	Louis XIV. transacting business with his Ministers in the Apartment of Madame de Maintenon	Gilbert, Sir J. ...	P	1881	378	0
29	The Wreck	Davies, H. E. ...	P	1871	16	16
30	Glen Falloch	Weedon, A. W. ...	P	1883	52	10
31	Croixelles Harbour	Gully, J.	P	1870	6	6
32	Corrie Echen	Richardson, T. M....	P	1880	200	0
33	Cottage Scenery	Watson, T. J. ...	P	1871	10	0
34	Japanese	Campi, G.	P	1876	4	0
35	Un Vecchio Cappuccino ...	Guardabassi, G. ...	P	1883	10	10
36	Temple of Minerva	Gigli	P	1883	15	15
37	The Matador	Guardabassi, G. ...	P	1883	10	10
38	Temple of Vesta	Gigli	P	1883	15	15
39	L'Elemosina	Guardabassi, G. ...	P	1883	21	0
40	One of the Falls on the Apsley.	Martens, C.	P	1873	21	0

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
41	The Nephew	Provaggi	P	1876	7	0
42	The Public Writer	Tommasi, P. de	P	1881	50	0
43	Loch Avon, Highlands of Scotland	Giles. J.	P	1871	30	0
44	The Minstrel	Provaggi	P	1876	15	0
45	Una Vecchia che Fila	Guardabassi, G.	P	1883	17	0
46	The Colosseum	Gigli	P	1883	15	15
47	The Venetian Senator	Guardabassi, G.	P	1883	10	10
48	Goldsmith's Arch	Gigli	P	1883	15	15
49	Admiral Blake with a Squadron of five ships blockading the Royalist Fleet under command of Prince Rupert in the Tagus	Brierly, Sir O. W.	P	1881	164	17
50	Copy of Van Dyck's "Portraits of a Lady and her Daughter"	Altson, A.	D	1892		
51	Copy of Velasquez's "Æsopus"	Longstaff, J.	D	1890		
52	Copy of Velasquez's "Los Borrachos"	Fox, E. P.	P	1893	100	0
53	Flight into Alexinaty during the Servian War	Gregory, C.	P	1881	27	0
54	Colliery Explosion—The Rush to the Pit's Mouth	Staniland, C. J.	P	1881	22	10
55	Speeches to be Lived Down if possible	Du Maurier, G.	P	1892	15	15
56	Portrait of Sir J. Millais, R.A.	Ward, L.	P	1881	9	9
57	Management	Keene, C.	P	1892	5	5
58	The Deserter	Holl, F.	P	1881	36	0
59	A Connoisseur	Du Maurier, G.	P	1892	15	5
60	Portrait of Edward Bulwer, Lord Lytton of Knebworth	Laugée, D.	P	1881	18	0
61	Holiday Time—Afloat	Green, C.	P	1881	27	0
62	Sunday Afternoon in a Picture Gallery	Green, C.	P	1881	23	10
63	Wapping Wharf, with boats and buildings	Whistler, J. M.	P	1892	1	1
64	Ships and Barges on the Thames	Whistler, J. M.	P	1892	1	1
65	Italian Musician with Violoncello	Whistler, J. M.	P	1892	1	1
66	The Forge, with Workmen	Whistler, J. M.	P	1892	1	1
67	Eagle Wharf, Thames and Ships	Whistler, J. M.	P	1892	1	1
68	Wharf Interior, with distant view of Thames	Whistler, J. M.	P	1892	1	1
69	Black Lion Wharf, on Thames	Whistler, J. M.	P	1892	1	1
70	Millbank Prison and River Thames	Whistler, J. M.	P	1892	1	1
71	The Pool, River Thames	Whistler, J. M.	P	1892	1	1
72	Westminster Bridge and Houses of Parliament in the distance	Whistler, J. M.	P	1892	1	1
73	Early Morning, Battersea	Whistler, J. M.	P	1892	1	1

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
74	Wapping on Thames	Whistler, J. M.	P	1892	1	1
75	Chelsea Suspension Bridge	Whistler, J. M.	P	1892	1	1
76	Hores' Wharf and Thames Warehouses	Whistler, J. M.	P	1892	1	1
77	Chelsea Bridge and River Boats	Whistler, J. M.	P	1892	1	1
78	London Warehouses and Shipping	Whistler, J. M.	P	1892	1	1
79	Whistler's House at Old Chelsea	Haden, S.	P	1892	7	14
80	Sunset in Ireland	Haden, S.	P	1892	10	17
81	Morning at Egham, Surrey	Haden, S.	P	1892	4	11
82	Sunset on the Thames	Haden, S.	P	1892	2	9
83	Shere Mill Pond	Haden, S.	P	1892	10	17
84	Early Morning at Richmond, England	Haden, S.	P	1892	4	11
85	Windmill Hill (Dorsetshire)	Haden, S.	P	1892	7	14
86	Kensington Gardens	Haden, S.	P	1892	3	10
87	Hulk of the Agamemnon	Haden, S.	P	1892	10	17
88	Little Pier of Calais	Haden, S.	P	1892	2	9
89	Sonning Alms Houses	Haden, S.	P	1892	5	12
90	The Little Boathouse	Haden, S.	P	1892	6	13
91	L'Abside de Notre Dame	Méryon, C.	P	1891	131	5
92	Le Stryge	Méryon, C.	P	1891	27	6
93	Le Petit Pont	Méryon, C.	P	1891	15	15
94	St. Etienne du Mont	Méryon, C.	P	1891	17	12
95	La Pompe. Notre Dame	Méryon, C.	P	1891	16	16
96	Ruins of Pierrefonds	Méryon, C.	P	1891	12	3
97	Méryon Mad	Flameng, L.	P	1891	3	3
98	Beggars at the Door of a House	Rembrandt	P	1891	42	0
99	The Three Trees	Rembrandt	P	1891	155	8
100	Rembrandt Leaning on a Stone Sill	Rembrandt	P	1891	73	10
101	Bust of an Old Woman	Rembrandt	P	1891	13	13
102	Christ and the Disciples at Emmaus	Rembrandt	P	1891	10	10
103	Christ Healing the Sick	Rembrandt	P	1891	178	10
104	Tobit Blind	Rembrandt	P	1891	5	0
105	The Goldweigher's Field	Rembrandt	P	1891	40	19
106	Resurrection of Lazarus	Rembrandt	P	1891	5	5
107	Jan Cornelius Sylvius	Rembrandt	P	1891	176	8
108	A Young Man Musing	Rembrandt	P	1891	10	10
109	Portrait of J. Momper	Van Dyck, Sir A.	P	1891	48	0
110	Portrait of Himself	Van Dyck, Sir A.	P	1891	63	0
111	Portrait of F. Frank	Van Dyck, Sir A.	P	1891	40	0
112	The Knight, Death, and the Devil	Dürer, A.	P	1891	74	11
113	Melancholy	Dürer, A.	P	1891	50	8
114	St. Jerome in the Cell	Dürer, A.	P	1891	115	10
115	When Snow and Ice are Gone	Meyerheim, R.	P	1891	80	0
116	The Breadwinners	Smythe, L.	P	1891	150	0
117	The Road that Skirts the Common	Bromley, J. M.	P	1892	80	0
118	The Leaves of Memory seemed to make a Mournful Rustling	Solomon, S. J.	P	1892	60	0

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
119	Fishing Vessels off Granton	Hayes, E.	P	1892	65	0
120	The Little Copse on the Hill	North, J. W.	P	1892	150	0
121	Oxford	Pugin, A.	P	1877	5	10
122	Sunset, Mount Earnslaw, N.Z.	Hingston, S.	D	1886		
123	Eve	MacDowell, P.	P	1877	189	0
124	Daphne	Wood, M.	P	1877	1,000	0
125	Sécurité	Dubucand, A.	P	1891	105	0
126	An Archer	Uphues, T.	P	1890	80	0
127	Half-draped Female Figure	Brütt, A.	P	1889	55	0

III.—THE VESTIBULE.

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
1	The Princess Royal	The Queen	D	1893		
2	Pigeons	H.R.H. The Prince Consort	D	1893		
3	Frederick III., Elector of Saxony	H.R.H. The Prince Consort	D	1893		
4	Princess Adelaide of Hohenlohe-Langenbourg	The Queen	D	1893		
5	The Princess Royal	The Queen	D	1893		
6	Head of a Dachshund	H.R.H. The Prince Consort	D	1893		
7	Prince Alfred	The Queen	D	1893		
8	The Queen's Skye Terrier, "Islay"	The Queen	D	1893		
9	The Princess Royal in Fancy Dress	The Queen	D	1893		
10	Old Women	H.R.H. The Prince Consort	D	1893		
11	Eagles	H.R.H. The Prince Consort	D	1893		
12	The Princess Royal in Fancy Dress	The Queen	D	1893		
13	Portrait of Her Majesty the Queen	Herkomer, Prof.	P	1892	945	0
14	Death as the Saviour	Klinger, M.	P	1891	2	4
15	Night	Klinger, M.	P	1891	2	4
16	The Peasant	Klinger, M.	P	1891	2	4
17	The Highway	Klinger, M.	P	1891	2	4
18	Herod	Klinger, M.	P	1891	2	4
19	On the Rails	Klinger, M.	P	1891	2	4
20	To the Beautiful in Nature	Klinger, M.	P	1891	7	0
21	The Child	Klinger, M.	P	1891	2	4
22	Mother and Child	Klinger, M.	P	1891	9	0
23	The Poor Family	Klinger, M.	P	1891	2	4
24	Sailors	Klinger, M.	P	1891	2	4
25	The Sea	Klinger, M.	P	1891	2	4

IV.—THE McARTHUR GALLERY.

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
1	Life and Death of a Rose	Ford, W.	D	1883		
2	Horses and Pigs	Herring, J. F.	P	1864	30	0
3	Still Life Study	Arnz, A.	P	1888	60	0
4	Ben Lawers	Lee, F. R.	D	1872		
5	Harvest Waggon	Cole, G.	P	1870	70	0
6	Cape Gris Nez	Cecchini, E. P.	D	1882		
7	Fishing Boats Leaving Boulogne Harbor	Weber, Th.	P	1884	157	10
8	Flamborough Head	Toovey, E.	P	1875	47	5
9	Druidical Monuments	Hering, G. E.	P	1872	210	0
10	To the Workhouse	Boyd, Mrs. E. M.	D	1893		
11	Evening Shadows, Otira Gorge, N.Z.	Peele, J.	P	1891	157	10
12	A Sheikh and His Son Entering Cairo on their Return from a Pilgrimage to Mecca	Dowling, R.	D	1878		
13	River, Mill, and Farm	Lee, F. R.	P	1868	300	0
14	Arab Prisoners	Hodgson, J. E.	P	1871	472	10
15	Summer Evening near Templestowe	Buvelot, L.	P	1869	80	0
16	First Meeting between Henry VIII. and Anne Boleyn	Folingsby, G. F.	P	1879	500	0
17	Moses Bringing Down the Tables of the Law	Herbert, J. R.	P	1878	1,700	0
18	Josephine Signing the Act of Her Divorce	Ward, E. M.	P	1888	997	10
19	Valley of the Mitta Mitta	Guerard. E. von	D	1866		
20	Start Point Light, off the Coast of Devonshire	Melby, W.	P	1871	157	10
21	The Buffalo Ranges, Victoria	Chevalier, N.	P	1864	200	0
22	Departure of the Pilgrim Fathers	Cope, C. W.	P	1864	400	0
23	Mount Kosciusko	Guerard, E. von	P	1870	157	10
24	Entrance to Glen Etive, from near King's House	Paton, W. H.	P	1882	200	0
25	Morning	Courtens, F.	P	1881	40	0
26	La Belle Yseult	Bedford, J. B.	P	1864	26	5
27	The Fern Gatherer	Herdman, R.	P	1864	52	10
28	Jackson's Creek, near Sunbury	Gritten, H. C.	D	1866		
29	Checkmate	Webb, C. M.	P	1870	115	10
30	Watergate Bay	Mogford, J.	P	1864	40	0
31	Unlading Fishing Smacks, Coast of Normandy	Koekkoek, H.	D	1889		
32	A Widow	Chartran, T.	P	1884	60	0
33	In the Studio	Schmidt, A. van	P	1884	150	0
34	A Dream of Latmos	Paton, Sir N.	P	1882	300	0
35	Scene in the North of England	Glover, S.	D	1870		
36	The Monopolist	Buss, R. W.	P	1877	18	7

No.	Subject.	Artist.	How Acquired.	When.	Price.	
					£	s.
37	Jealous	Waller, S. E. ...	P	1875	50	0
38	Grandmother's Reading Lesson	Bell, E.	D	1885		
39	Sea Fog Blowing Over Oulton Broad, Norfolk	Fahey, E. H. ...	P	1892	300	0
40	Sheep in Repose	Tschaggeny, E. ...	P	1864	168	0
41	Freshwater Bay, Isle of Wight	Eschke, H.	P	1881	90	0
42	Winter Morning near Heidelberg	Buvelot, L.	P	1869	80	0
43	Summer Morning, North Wales	Ellis, E.	D	1889		
44	Noli Me Tangere	Plockhorst, B. ...	P	1881	400	0
45	Weald of Kent	Bough, S.	P	1871	120	0
46	Waterpool at Coleraine ...	Buvelot, L.	P	1870	131	5
47	England	Creswick, T., and Ansdell, R.	P	1878	750	0
48	Rachel Going to the Well ...	Goodall, F.	P	1867	300	0
49	Italian Brigands	Layraud, J.	P	1873	400	0
50	Fisherwoman	Cogen, F.	P	1881	90	0
51	Gulf of Salerno	Unterberger, F. R....	P	1875	126	0
52	Chestnut Grove, Valley of the Tessin, Italy	Ludwig, C.	P	1888	125	0
53	Bunyan in Prison	Folingsby, G. F. ...	P	1864	157	10
54	The Heart of the Coolins, Isle of Skye	Halswelle, K. ...	P	1888	400	0
55	Mental Arithmetic	Gotch, T. C. ...	D	1884		
56	Welcome Shade	Halswelle, K. ...	P	1888	600	0
57	Death of George Villiers, Duke of Buckingham	Wynfield, D. W. ...	P	1881	250	0
58	Dunstanborough Castle ...	Turner, J. M. W. ...	D	1888		
59	La Dernière Etape de Coco ...	Beyle, P.	P	1881	200	0
60	A Norwegian Fjord	Duntze, T. ...	P	1875	60	0
61	Original Sketch of the Indian Shepherd	Chevalier, N. ...	D	1891		
62	In the Fields	Leader, B. W. ...	P	1873	40	0
63	The Morning after Trafalgar...	Stanfield, W. C. ...	P	1866	1,200	0
64	A Mill Race	Lewis, C. J. ...	P	1871	75	0
65	Ferry on the River Ninfa ...	Williams, P. ...	P	1864	89	5
66	Memories of the First Palm Sunday	Courtauld, E. ...	P	1872	157	10
67	Autumn on the Hudson ...	Sonntag, L.... ...	D	1867		
68	Upper Morelaggan, Loch Long	Paton, W. H. ...	P	1882	200	0
69	The Land's End	Koekkoek, H. ...	D	1888		
70	On the Ice, Stockholm ...	Cedergren, P. W. ...	D	1861		
71	Rose of England	Baxter, C.	P	1864	135	10
72	Rosebud of England	Baxter, C.	P	1864	157	12
73	Italian Peasants	Innocenti, G. ...	P	1870	47	0
74	Adam and Eve Finding Abel..	Carta, N.	P	1870	70	0
75	Child Playing at Grandmother	Gray, K.	P	1872	15	0
76	Travelling Tinker	Opie, E.	P	1873	47	5
77	Bamborough Castle, Northumberland	Hunt, A. W. ...	P	1873	262	10
78	Death and the Fortune Teller	Attributed to C. Bega	P	1874	50	0
79	Balmoral	Adam, J.	P	1878	150	0
80	Ben Venue and Loch Vennachar	Law, D.	P	1881	100	0

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